Manitoba

Annual Report 1989 - 90

Natural Resources

91-04249/

Minister of
Natural Resources

Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

The Honourable George Johnson
Lieutenant Governor of Manitoba
Government House
Winnipeg, Manitoba

Your Honour:

I am pleased to present you with this the 59th Annual Report of the Manitoba Department of Natural Resources for the year ending March 31, 1990.

Yours Truly,

Harry J. Enns
Minister

Manitoba

Deputy Minister of
Natural Resources

Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

The Honourable Harry Enns
Minister of Natural Resources
Legislative Building
Winnipeg, Manitoba
R3C 0V8

Dear Sir:

Last year's *Annual Report* was the first step towards presenting this department's activities as a cohesive whole rather than as separate reports of its several branches. This year's *Annual Report*, based on guidelines prepared by the Clerk of the Executive Council after extensive analysis and consultation with departmental personnel, has been taken another step forward. The department's achievements are still reported under branch responsibilities but are more closely related to expenditure and revenue.

The structure of the report is such that branch narratives are based on and linked to the department's *Estimates Supplement* thus providing an important basis for fiscal and performance accountability.

We believe that the changes made are definitely an improvement.

I respectfully submit this the *1989-1990 Annual Report* for your attention.

Dale Stewart
Deputy Minister

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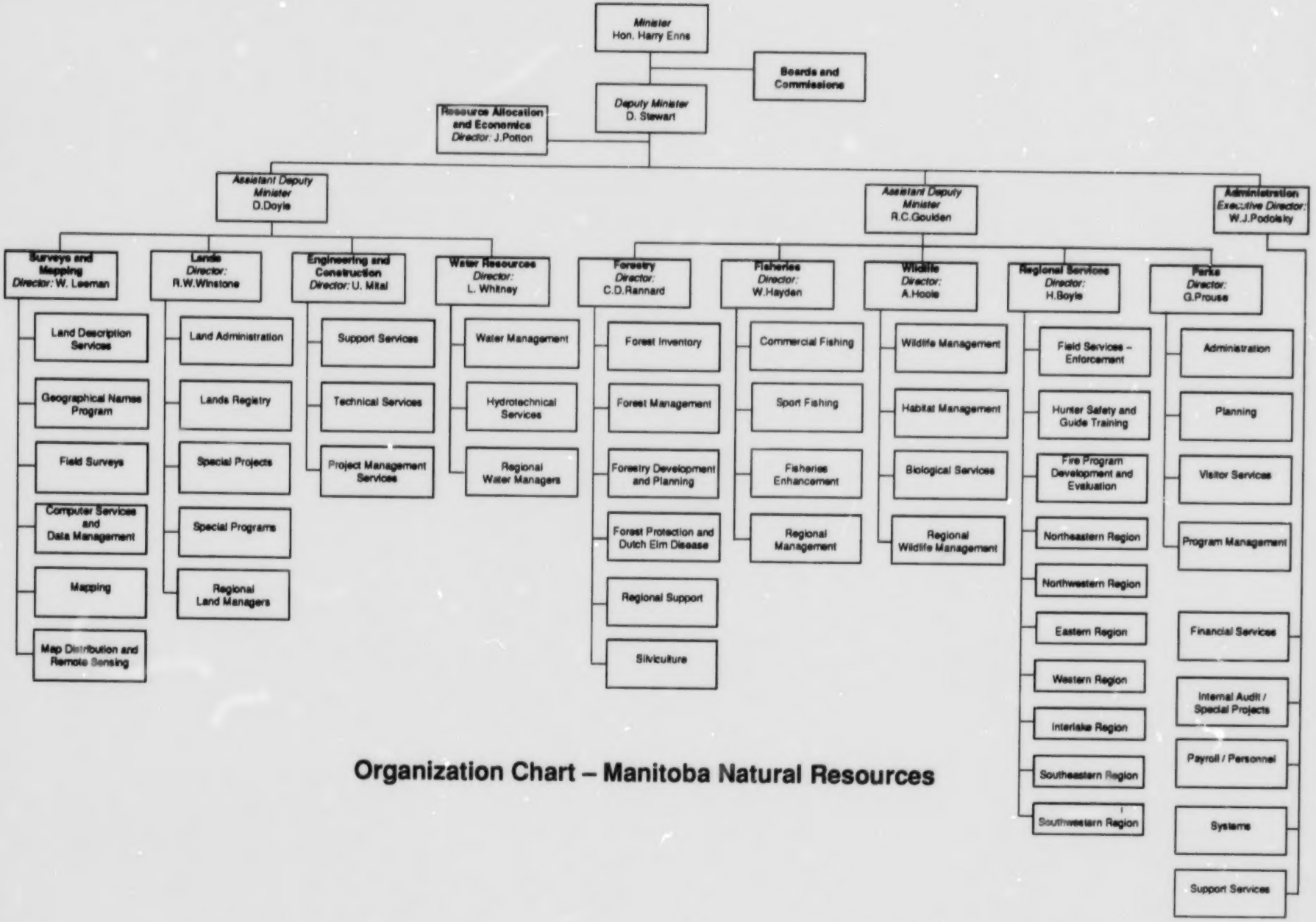


Organization Chart – Manitoba Natural Resources

Section 1

Executive Summary

Administrative Services Division

Of greatest significance to the department during the period covered by this report were the extensive forest fires that involved temporary transfers of staff and equipment to and from several branches and departments. There were two major outbreaks of fires in the province: the first in early May in the south, and the second in mid July throughout the north. It was the worst forest-fire season on record for Manitoba with 1,147 fires consuming 3.2 million ha and costing over $63 million to suppress. An additional cost of $17 million was incurred when 24,500 people were evacuated from 32 communities.

Overall, $39 million more were expended on firefighting than is spent in an average year. This resulted in an increase of 75% in the number of documents processed for payment.

There was also a significant increase in recruitment and classification activity as indicated by Personnel Services.

In 1989-1990 the departmental average was 2.26 training days per employee. Computer training for staff increased by 84%. The newly proclaimed legislation on workplace safety and health necessitated the training of all employees exposed to hazardous products.

All branches developed five-year plans with specific classifications targeted for "affirmative action" candidates. A new Affirmative Action Committee was established to provide guidance to branches to develop their plans.

The Systems Services Branch co-ordinated the acquisition of $942,000 worth of software and hardware for the department. The number of microcomputers increased from the previous year's base of 240 to 325, requiring increased support for both the software/hardware and the users.

Internal Audit, with three staff members, completed two and initiated two new major audits, completed three minor audits, completed one and continued work on three additional special projects, and spent one staff-year on day-to-day, continuing and annual audits.

Forestry

The Forestry Branch's aerial photography was curtailed due to smoke from the forest fires followed by cloud. Nevertheless, the branch was able to complete its scheduled forest cover mapping, but due to the re-assignment of interpreters to forest-fire activities only a small portion of photo-interpretation was completed. Forest surveys were also curtailed due to the closure of forests on account of the fires.

The branch continued its liaison with the province's forest industry and also provided assistance to private owners to develop their woodlots. The branch maintained its support for *National Forest Week* and the Manitoba Forestry Association, published educational materials and was represented at several public events.

Aerial spraying of a bacterial insecticide for spruce budworm was conducted over high-use recreational areas and high-value timber. The loss in urban areas due to Dutch elm disease remained below 2% in most communities.

Timber revenue decreased by 19.6% from the previous year, but forest renewal activities remained at about the same level. Major regional activities related closely to five-year operating plans for Abitibi-Price Inc. and Repap Manitoba. Sustainable development of forest reserves was a continuing involvement. Legislation was passed to provide for a forest-renewal charge on a cubic-metre basis on all wood harvested in the province.

Regional staff were also involved in integrated forestry and wildlife studies that included the moose and caribou, and the great gray owl.

Wildlife

The Wildlife Branch was involved in several management initiatives regarding elk, black bear, upland game birds and waterfowl. A major project deals with ascertaining the extent of brainworm in white-tailed deer, a disease fatal to moose but of little effect on deer. Investigations into the management of the Pen Island caribou herd was a joint operation with Ontario and aboriginal communities. Another co-operative study was of the relationship between timber harvesting and woodland caribou—a five-year study now in its fifth year.

A uniform bag limit of one bear per year was implemented, and a quota system was established for non-resident bear hunting. Trapping of bears was also limited by a quota system in areas where current levels exceed allowable harvests. Black bears that caused problems to beehives were removed from their vicinity. Compensation was paid to farmers and beekeepers who suffered losses not only from the activities of the black bear but also from those of deer and elk.

Due to the dry summer and fall there was little damage to crops by waterfowl. While many duck species were at or near record low levels, goose populations continued to increase. The number of waterfowl hunters continued to decline, a trend that began in 1978. A comprehensive management plan for upland game birds was drafted to better manage these populations.

The Oak Hammock Marsh Wildlife Management Area was again the most popular area for visitors, with attendance at over 83,000. The information centre at the marsh was open seven days a week from mid May to mid October. Other popular attractions were the snake dens at Narcisse. Among educational projects of the branch were participation in *National Wildlife Week*, speaking engagements, production and distribution of informational materials, guided tours and competitions. Under Project WILD, a program co-sponsored by the Canadian Wildlife Federation and the Wildlife Branch, some 500 educators were trained in the use of materials pertaining to environmental education.

Together with the Fort Whyte Centre for Environmental Education, the branch organized the signing of a *Conservation Declaration* by M.L.A.'s of all parrties to meet the challenge of conserving the province's soil and water resources. Habitat enhancement includes waterhole development, gravel pit rehabilitation, re-seeding of burned meadows with forage crops for elk, and salvaging in a blow-down area.

The Wellington Wildlife Management Area was established and additions were made to six others. Wildlife land planning centred on the development of a systems plan for Wildlife Management Areas, a feasibility study for a National Park at Cape Churchill, and on the implementation of a computerised geographical information system.

A cost-sharing agreement signed with four other organizations allowed for the recommitting of funds from the deer habitat program to the critical wildlife habitat program. The emphasis in the first year of the Critical Wildlife Habitat Program was on tall-grass prairie preservation.

A joint committee of the Highways Department and the Wildlife and Fisheries Branches was established to set guidelines for highway maintenance and operation. There are 13 municipalities active in the Conservation Corridors Program which is intended to preserve or restore tree, shrub or grass cover along unused municipal road allowances.

The North American Waterfowl Management Plan was further advanced with the signing of the *Prairie Habitat Joint Venture Agreement* with Alberta and Saskatchewan, federal government departments and private resource agencies. The program received $1.1 million from the United States to acquire critical habitat and for long-term leases, and some $134 million will be spent in Manitoba during the life of the N.A.W.M.P.

In its fourth year of operation, the Habitat Enhancement Land Use Program continued devising and demonstrating innovative techniques for preserving habitat on private lands. At Delta and Lidcliff, the most recently designated marshes under the Heritage Marsh Program, management activity is continuing. The largest project begun by Ducks Unlimited in 1989 was designed to capture water in a portion of the basin of the now dry Whitewater Lake.

The Fur Program, cost-shared with the federal government, continued to provide financial and staff resources to the Fur Institute of Canada and the Manitoba Trappers' Association. The number of trappers on file declined by approximately 20% from the previous year.

A census was conducted of the three main and other breeding areas for piping plovers. Efforts were increased to protect piping plovers on beaches from all-terrain vehicles. Thirteen great gray owls were trapped for banding. Of 142 known nest structures checked for breeding owls only one was found to be in use.

The nesting success of peregrine falcons in Winnipeg received extensive media coverage, and with the release of five more young, the total of peregrine falcons released since 1981 reached 38.

Varied and extensive conservation efforts were made to maintain existing populations and critical habitat of threatened and endangered grassland birds. National recovery plans are in preparation and will be followed by provincial recovery plans.

Resource Allocation and Economics

The Crown Land Classification Committee proposed the establishment of two Wildlife Management Areas and one Provincial Park. The committee considered 67 sales of agricultural Crown land, approving 37 of them.

The branch prepared a report on the acquisition, sale and commitment of Crown land in the province from 1960 to 1989. It also conducted a survey of Manitobans to obtain information about their outdoor recreational activities and preferences.

The branch assisted with the drafting of *The Endangered Species Act* and amendments to *The Ecological Reserves Act*, which were passed by the legislature and received Royal Assent. Three new ecological reserves were designated for protection under *The Ecological Reserves Act*.

The branch actively participated in the development of sustainable development strategies for forestry, minerals, energy ,and incentives and fiscal policy. It also monitored the implications to the department of trade issues, icluding the *Free Trade Agreement*, softwood lumber countervail and the *General Agreement on Tariffs and Trade*.

One of the management tasks undertaken by the branch was the analysis of forest fires on Indian Reserves, as required for negotiations with the federal Department of Indian Affairs. The branch also developed a metyhodology for estimating the economic value of timber losses caused by forest fires.

The branch co-ordinated the activities of a northern consultation task team responsible for recommending clarification and strengthening of the department's consultative policies and processes in northern areas.

The distribution of 16-mm films was taken over by Public Library Services, but the Communications Section continued to serve both the public and the media with up-to-date information.

Engineering and Construction

The Design Section of the branch was involved in 229 projects of which 116 were plans and specifications, and 112 were investigations and reports. A manual was prepared on the design of small dams for use in the agricultural area of the province.

The Geotechnical Section conducted 30 investigations and reports, and 17 provincial dam inspections. Also inspected were 10 construction sites. The geotechnical laboratory ran 7,683 tests for various government agencies at a cost of over $117,000.

The Maintenance Section has completed six operations and maintenance manuals, and three sets of record drawings for sewer and water systems in Provincial Parks.

The Project Management Section completed 159 surveys and investigations for the Water Resources Branch.

Flood damage reduction programs included the Portage Diversion; Lake Winnipeg Dykes; Red River Floodway; Valley Town Dyking systems at Emerson, Dominion City, St. Adolphe, St. Jean, Morris, Letelier, Rosenort and Brunkild; Shellmouth Dam and Saskatchewan River Dykes.

Major waterway construction projects for the Water Resources Branch involved Washow Bay, Camper Drain, Swan Creek, Lake Francis, Ridgeville Drain, South Lateral Drain, D20 Drain, Dubas Drain, Cooks Creek Diversion, Barrickman Drain, South Shannon Creek, Aux Marais River, Carman Diversion, Community Pasture Drain and the Jackfish Creek Drain.

Engineering and project management services were provided on the Gimli flood protection project and the Pasquia Polder III project.

Under Water Resources' administration permits program the branch issued 55 permits, had 54 permits requiring surveying services, 31 permits on the east side of the Red River, and 23 on the west side.

A study was conducted for the Manitoba Disaster Assistance Board to address the primary question of weak spots in the flood protection of rural inhabitants. This study involved surveys of 477 farm sites and businesses in the municipalities of Rhineland, Franklin, De Salaberry, Macdonald and Ritchot.

Under the bridge replacement program the branch was responsible for 25 different projects. An unsafe steel-and-timber bridge was removed from over the Wilson River.

A variety of engineering services were provided to the Conservation Districts of Cooks Creek, Whitemud Watershed, Turtle Mountain, Turtle River and Alonsa. There were 113 surveys and investigations conducted for the Whitemud Watershed Conservation District and the Turtle Mountain Conservation District. There were 15 small dams constructed in the Whitemud Watershed Conservation District and 22 in the Turtle River Conservation District. Two miles of the Waldersee Drain were completed.

A maintenance program was successfully completed in Oak Hammock Marsh for the Wildlife Branch.

Construction on the Kinwow Bay Road was completed for the Forestry Branch.

Surveys were conducted for Ducks Unlimited in the Rat River arera north of Vita.

Fisheries

The *Five Year Report on Fisheries* was completed and tabled in the Legislature. Meanwhile the branch continued to finalise its reorganization. The new Regional Fisheries Management Section will ensure the delivery of management programs, the Sport and Commercial Section will deal with programs relating to resource use, and the Habitat Management Section will be concerned with fish habitat.

Some major commercial fisheries were monitored and assessed in 1989-1990. Creel surveys were conducted of the winter sport fishing on Lake Manitoba with the assistance of the Manitoba Wildlife Federation, and on Lake of the Prariries with the co-operation of Fish Futures Inc. Intensive tagging was done of catfish and walleye in the Red River, lake aeration projects were conducted in several sport fisheries, rehabilitation efforts were continued at different lakes and rivers, and a quota entitlement system for commercial fishing licences in the summer was introduced for Lake Winnipegosis.

Operation of the Grand Rapids Fish Hatchery was extended to year-round. The co-operating association, Friends of the Whiteshell Inc., conducted tours through the Whiteshell Fish Hatchery. Adult pike were stocked in ponds in the Fort Whyte Centre for Environmental Education.

Monitoring of the ecological impact of the Churchill-Nelson hydroelectric development was concluded, but fisheries studies on the lower Nelson River were continued. Information on waterbodies was incorporated into the Fish/Habitat Inventory and Classification system. The Fisheries Branch assisted the non-profit Manitoba Habitat Heritage Corporation with several projects aimed at restoring or enhancing fish habitat.

The commercial fish production in the open-water fishery of 1989 and the winter fishery of 1989-1990 was down by 4% from the previous year. The open-water commercial fishery on Lake Winnipegosis was reopened after a three-year closure. The second season of the 3"-mesh midwinter fishery on Lake Winnipegosis was suspended in March 1990 due to the high levels of a harmless but unsightly parasite.

The Province is the first jurisdiction in North America to pass an across-the-board barbless regulation which went into effect in 1990. Also, the limits for pike, walleye and sauger have been reduced, and all walleye, channel catfish, trout and smallmouth bass caught during fish derbies will have to be released.

The *1990 Sport Fishing Guide* was published by the non-profit Fish Futures Inc. in co-operation with Manitoba Natural Resources. Other private organizations and groups worked with the branch to co-operatively manage fisheries resources across the province.

Because of the downward trend in fish prices the Northern Fishermen's Freight Assistance Program was particularly important to northern commercial fishermen.

The Manitoba Agricultural Credit Corporation explored the possibility of establishing a group life insurance program for its fishermen clients. Of the 33% of questionnaires returned, 99% were in favour of the coverage.

Lands

Following the government's decision to consolidate all appraisal functions in the Department of Government Services and to transfer the wild rice extension to the Department of Northern Affairs, the Lands Branch was restructured to absorb the non-appraisal workload from the Special Projects Section.

Policies and procedures for the development of Crown lands for recreational purposes by private developers were finalised. With the registration of recreational subdivision plans, approximately 200 lots were available for sale.

The Leases and Permits Section assumed responsibility for wild rice licensing. The Lands Branch was relieved of its responsibility for the Border Waters Program. The staff year now reports to the deputy minister and is responsible for the Border Waters Liaison and other special projects.

Work continued towards the establishment of a complete central Crown lands registry.

Parks

The Program Services and the Regional Parks Management Sections were established in the Parks Branch in 1989 to clarify responsibilities and make the branch more responsive. There were several staff changes that allowed for both career development and promotion of affirmative action.

Work continued on several draft and interim management plans for park lands. A feasibility study on the establishment of a national park at Churchill is being

prepared. An ethnographic study of the Tie Creek Basin in Whiteshell Provincial Park was completed. A study of the south Whiteshell was completed in co-operation with the Department of Industry, Trade and Tourism. In preparation is a Parks/Tourism development strategy which will be updated every two to three years. A report on the *Resource-based Tourism Industry in Manitoba* prepared with the Department of Tourism deals with options for licensing and managing the industry.

The Program Services Section prepared a manual on *Parks Branch Directives* for distribution to all offices of the Regional Services Branch, directors and senior executives. It also prepared a "user-friendly" cottaging guide as part of the branch's enhanced communication with cottagers.

Several park fees were increased with only minimal public outcry. Pilot projects begun in 1989 were the selling of annual park entry passes by vendors, the installation of day-entry ticket-dispensing machines, and the acceptance of credit cards for payment of camping fees. A pilot project for risk management was also tried out in three regions during the winter of 1989-1990.

Although the cost recovery targets established for each revenue activity in Provincial Parks are expected to recover 60% of operating costs on implementation, for 1989-1990 the cost recovery was 48.7%.

A tendering process was set up for the conduct of special events at Grand Beach Provincial Park. Sewage treatment facilities in Provincial Parks were inspected and inventoried as part of the water-quality control program. As a result, the need for more than one site inspector was confirmed.

An inventory of potable water supplies identified all sources in use, the types of equipment employed and the treatment facilities available.

Major capital expenditures of the Parks Branch have included lagoon construction at Paint Lake and lagoon reconstruction in Whiteshell Provincial Park. The cost of maintaining the existing facilities represents approximately 80% of available funds.

All solid waste disposal sites in Provincial Parks were included in a central registry in the Winnipeg office.

The branch's *Three-Year Marketing Plan* was completed. Market research included surveys of cottagers and campers, the latter conducted by the University of Manitoba. Rural and urban focus group studies were conducted with existing park users, infrequent users and non-users. Analysis of the *1988 Park Visitor Survey* indicates that 77.5% rated their visits to parks as very enjoyable, with only 1.6% rating them as not enjoyable. The development and approval of an *Interpretative Strategy* has identified programs and products in Provincial Parks according to priority until 1996. The program to revitalise Hecla Village commenced this year.

Promotional activities included the branch's involvement in the Discover Manitoba Discount Program, a co-operative venture with Travel Manitoba and Blackwoods Beverages. Promotion was also made on a Denver radio talk show sponsored by United Express Airlines, and for Grass River Provincial Park on the Cable News Network.

The operation of Springhill Winter Park was transferred to a private operator and resulted in a dramatic increase in use. An agreement was also completed with a private operator for commercial services in Grand Beach Provincial Park.

Twice the number of people contacted in 1987-1988 were contacted last year by the volunteer campground hosts. Grants were again provided to the three co-operating associations operating in Provincial Parks, and also to the International Peace Gardens and the Fort Whyte Centre for Environmental Education.

The Beach Safety Program was reviewed and restructured.

Regional Services

The record number and severity of forest fires throughout Manitoba in 1989 dominated the activities of Regional Services Branch staff. In total, 1,147 forest fires consumed an estimated 3.2 million hectares and cost more than $63 million to suppress. These fires forced the evacuation of 24,500 people from 32 communities at an additional cost of $17 million.

In the aftermath of the fires, internal, public and expert reviews of the Province's Fire Program were conducted with a view to improving overall program effectiveness. Recommendations from these reviews were in the process of implementation at fiscal year-end with an enhanced initial attack capability expected to be in place for 1991.

Other initiatives were also under way relative to emergency fire-fighter training, new prevention programs, improved communications and inter-agency liaison, equipment development, detection, aircraft and staffing. A new alert response system was being developed which

would provide for significant man-up in response to increasing fire danger conditions. A proposed new bird dog program is expected to improve water-bombong effectiveness and aircraft safety.

The number of prosecutions and written warnings issued for resource-related violations was up slightly from 1988 levels. A total of 2,998 prosecutions were initiated with 87% or 2,640 resulting in convictions. In addition, there were 1,087 written warnings. Fisheries violations increased most significantly from 1,012 to 1,623, many of these related to use of barbless hooks and failing to carry or produce a licence. The departmenmt's recent "get-tough" policy on rowdyism in Provincvial Parks appears to be working as violations of *The Liquor Control Act* and *The Provincial Park Lands Act* were down significantly from 1988 levels.

There was a continued enforcement focus on illegal harvesting of fish and wildlife, with the Turn-in-Poachers Program and use of specialised officers playing an important role in catching violators.

Interpretations related to the *Charter of Rights and Freedoms* and Treaty Indian hunting and fishing rights continued to demand attention.

There were 2,568 problem wildlife occurrences reported to the department in 1989-1990 compared to 2,622 in 1988-1989.

The number of hunter and firearm safety training program graduates fell to 2,479 in 1989-1990 from 2,953 the previous year. Similarly, the number of guide licences issued was down from 865 to 803.

Keith Murray Bartley. During the course of a night patrol operation a tragic accident occurred in which officer Keith Bartley was killed. Officer Bartley's dedication and commitment to the betterment of the province's natural resources will have a lasting impact. He is sadly missed by his many co-workers.

Surveys and Mapping

The activities of the Manitoba Geographical Names Program included the planning and organization necessary for hosting the annual meetings of the Canadian Permanent Committee on Geographical Names, the provision of more than 100 topographical maps of northern Manitoba in support of a research program in the District of Keewatin, Northwest Territories, and the formal presentation of commemorative name certificates on three occasions.

The use of satellite positioning technology in the Field Survey Section became a reality with the acquisition of three Global Positioning Systems receivers. This new technology provides a major opportunity to address land survey system maintenance problems and to meet increasing demands for geographically referenced land information.

Under the umbrella of the Geographic Information Technology Development Program of the federal government a test was completed to capture digital data using provincial specifications to support the needs of the two governments. A second project negotiated under the same program will see the creation of about 60 digital data sets which are part of the southern Manitoba 1:20,000 mapping program.

The Manitoba Remote Sensing Centre and the Manitoba Aerospace Technology Program sponsored a radar remote sensing workshop to enable participants to upgrade their skills. A forest map project for all of Canada was undertaken in co-operation with Energy, Mines and Resources Canada.

Over 65,000 maps were distributed during the year through retail sales and a dealer network that includes Manitoba, northwestern Ontario and the northern United States. Over 8,000 aerial photographs were added to the Air Photo Library bringing the total holdings to just over 790,000; and over 30,000 products were sold to the library's users. This was short of the objective of 40,000.

The Computer Services and Data Management Section provided information to over 40 agencies and responded to more than 200 requests from the private sector and the general public for spatially referenced data and other surveying- and mappin- related information.

Water Resources

For the second year in a row drought conditions had an impact on water rights requests and inquiries. There was a 60% increase from the previous year of the number of licences issued. The number of licences for irrigation increased by 150%, and for waterfowl conservation by 90%. Inquiries about water rights and related matters increased by 50% from the previous year.

Activities of the Water Management Section included the monitoring and operation of 107 provincially owned dams, the Red River Floodway and the Portage Diversion, and the maintenance of 4,320 km of provincial waterways.

In co-operation with the Manitoba Disaster Assistance Board the Water Resources Branch began an inventory of all floodproofing measures in the Red River valley that were constructed after the floods of 1966, 1974 and 1979. Most reservoirs, with the exception of Shellmouth and Morden, were replenished during the 1989 spring runoff.

A *Workbook on Water* was prepared by the department under the land and water strategy. This was followed by a *Workbook on Soil* by the Department of Agriculture. A summary of input from all sources, and proposed revisions to water and soil policies arising from that input, were included in *What You Told Us*.

The Assiniboine Delta Aquifer Management Advisory Board was established to formulate a long-term plan for the area. A detailed topographic map of the Plum Lakes area was completed by consultants for Ducks Unlimited and the Canadian Wildlife Service. On the basis of the 1989 experience in the Whiteshell lakes some procedure modifications were made for Brereton Lake, and a slightly higher range was adopted for White Lake.

A technical advisory group prepared *Dauphin Lake, Opportunities for Restoration* which defined the key resource issues and proposed options for restoring the lake basin. As part of the Pembina triangle water supply strategy a task force was established by the Pembina Valley Development Corporation and the Lower Red River Valley Water Commission. Phase One of the Washow Bay Water Management Project was completed in the fall of 1989, and an agreement for Phase Two was signed in September 1989.

The federal and provincial governments have agreed to expand the capacity of Jackson Lake Reservoir by approximately 90%, and of the Stephenfield Reservoir by approximately 20%. An application has been made for a licence for construction and operation of the North Duck River project. In 1989 the Province constructed the Jory Pump Station and approximately 2.4 km of dragline on the Pasquia Lake Drain. The Province also applied for a licence for the Pelican Lake Enhancement Project after conducting an environmental assessment which included the impact on the Pembina River basin.

Construction on the Carman Flood Protection Diversion was begun after receipt of an environmental licence. Excavation work scheduled for the Gimli Diversion Project was cancelled due to problems associated with acquiring the necessary right-of-way. The federal government agreed to bear the full cost of the Cooks Creek Diversion Project.

Data for 52 hydrometric stations was submitted to the federal government for inclusion in its *1989 Annual Surface Water Report*. Flood forecasting during the spring of 1989 was focused on the Red River where melt of a heavy snowpack produced record flooding in the headwater area upstream from Fargo, North Dakota.

Due to the interest in the groundwater relationship of the Assiniboine Delta Aquifer to the streamflow of the Assiniboine River a paper on discharge to streams from the aquifer was presented to the International Coalition's conference.

Received under the extended *Agreement Respecting Flood Risk Mapping* and the *Agreement Respecting Studies for Flood Damage Reduction*, were the amounts of $500,000 and $200,000, respectively. The *Agreement Respecting Flood Forecasting* terminated in September 1989. The amended *Canada-Manitoba Agreement Respecting Flood Protection Projects in Manitoba* ended in March 1989. An amending agreement signed in January 1990 extended the agreement to March 1991 with the provision of an additional $800,000.

Section 2

Introduction

While the purpose of an annual report is to present the activities of the department during the fiscal year being reviewed, the format of that coverage can be in one of many forms. Over the years the department's *Annual Report* has seen changes, some minor some major, all incorporated towards the end of making it a cohesive unit. However, this has not been easy due to the very diverse nature of the different branches' responsibilities; and hence the evolution has been slow.

Nevertheless, moving on from the new format used last year, this year's *Annual Report* has been restructured to tie the branches' and sections' achievements more closely to costs and financial returns.

The documents related to the *1988-1989 Annual Report* were the department's *Mission and Roles Statements 1989* and the *Supplementary Information for Legislative Review: 1988-1989 Estimates*. This year the most closely related document is the *Estimates Supplement*. As a result, new features in this report are narratives and tables of sub-appropriations for some Crown corporations, commissions, grants and special projects.

On account of all this, it is possible that some confusion may arise due to the use of yet another format in so short a space of time. But, as before, it is expected that any such confusion will be temporary. It is believed, instead, that this issue of the annual report is both readable and informative, and of immense value to all those interested in this department's role in government.

Section 3

Administrative Services Division

Minister's Salary and Executive Support

The objectives of the executive support are to manage the department effectively to ensure that the natural resources of the province are used, managed and protected in such a way as to ensure sustained viability for the benefit of future generations; and to manage and allocate the natural resources to maximise the long-term social and economic benefits to the citizens of Manitoba.

Table AS.1

Expenditure by Sub-appropriations 12-1(a) (Minister's Salary) and 12-1(b) (Executive Support)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		7.00	250,300	
Main Estimate Authority from General Salary Increase XXV			13,600	
Total Salaries	264,500		263,900	600
Total Other Expenditures	112,300		87,700	24,600

Financial Services

The objectives of the Financial Services Branch are to provide effective financial support services to the departmental executive, program managers and operational staff; to provide a comptrollership function on behalf of the Department of Finance and Treasury Board; and to ensure that the public can conveniently purchase hunting and fishing licences.

In 1989-1990 the Licensing Section distributed and sold 92,626 hunting and 180,870 fishing licences and 61,724 wildlife certificates, for both residents and non-residents, through 785 private and 72 departmental vendors throughout the province. In addition, 8,666 trapping licences were sold to residents. Vendor activity during the year included 154 new appointments, 98 discontinuances, 35 suspensions of privileges and 13 reinstatements. Of the 785 private vendors, 700 are located in rural Manitoba.

A computer-based public draw was again used to allocate 2,995 licences for special limited hunting opportunities for residents of the province. There were 6,007 residents who applied for 3,660 licences for elk, moose and caribou hunts. The licences for the more accessible areas were all allocated, with most of the remaining 494 licences being sold over the counter on a limited-time basis.

The extremely severe forest fires in 1989-1990 significantly affected the financial operation of the department with $39 million more being expended than in an average year. These additional expenditures resulted in an increase of 75% in the number of invoices, rental agreements and other documents processed for payment by the Disbursements and Contract Administration Section, with approximately 66,000 payments being made from some 525,000 documents.

The Revenue Management Section handled approximately 75,000 transactions from 114 separate revenue sources, totalling $48,796,789, of which approximately 65,000 were over-the-counter transactions totalling approximately $16 million.

The Budget Services Section implemented a local-network computer system which improved the response time for budgetary, cash flow, reporting and supplementary funding requirements of the department. This proved to be particularly effective for the additional funding required during the severe forest-fire season.

Table AS.2
Expenditure by Sub-appropriation 12-1(d) (Financial Services)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		31.04	881,000	
Main Estimate Authority from General Salary Increase XXV			31,400	
Total Salaries	868,800		912,400	(43,600)
Total Other Expenditures	221,200		222,100	(900)

Human Resources

Payroll Services

The maintenance of four payroll systems continued to be the major responsibility of Payroll Services in 1989-1990. This involved accurate and timely distribution of cheques as shown in Table AS.3.

Table AS.3
Distribution of Cheques

Regular IBM	2,695*
Gangsheet	968*
Tree Planter	458
Fire Fighter	6,987

**327 new appointments.*

Automation of manual systems continued throughout the last fiscal year involving the following.

**Tree Planter Payroll.* Computerised salary calculation, cheque production, recording and T4A processing.

**Emergency Fire Fighter Payroll.* Acquisition of software to automate payroll reconciliation, record-keeping and T4A generation.

**Natural Resources Payroll System.* Ongoing enhancement enabled Payroll Services to record and monitor employee attendance, calculate benefit and entitlement, and produce payroll documentation for payment of salaries. This system also produced miscellaneous reports such as employee seniority listings, service reports, pay equity, staff-year usage and increment lists for departmental and government use.

Personnel Services

Personnel Services experienced a significant increase in recruitment and classification activity, as shown in Tables AS.4 and AS.5.

Career Symposium

For the 10th year, Manitoba Natural Resources participated in the Career Symposium at the Winnipeg Convention Centre by providing information to students about the potential for employment with the department. Approximately 300 visitors were attended to by personnel administrators and trained volunteers.

Table AS.4
Classification Reviews

Administrative Services	26
Engineering and Construction	8
Fisheries	5
Forestry	9
Lands	2
Parks	13
Regional Services	12
Surveys and Mapping	4
Water Resources	5
Wildlife	4
Total	88
Classification Appeals	6

Table AS.5
Appointments

Formal Competitions	
Open	18
Closed	30
Internal	7
Subtotal	55
Permanent Appointments	
Non-entry Level	4
Entry Level	8
Subtotal	12
Term Appointments	
Non-entry Level	59
Entry Level	43
Subtotal	102
Term Extensions	
Non-entry Level	25
Entry Level	10
Subtotal	35
Lateral Transfers	42
S.T.E.P.	42
Waivers of Competition	5
Redeployments	6
Order-in-Council Appointments	5
Total	304
Competition Selection Appeals	7

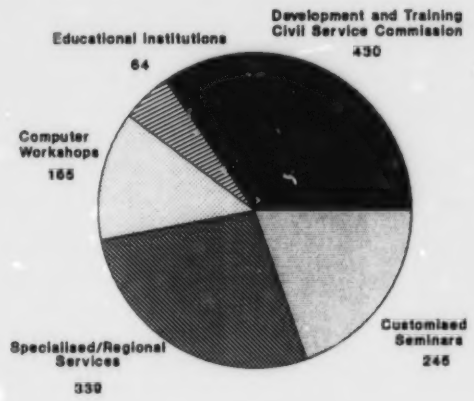
Table AS.6
Miscellaneous Employment Records

Formal Grievances	23
Employees Rejected Within Probation	0
Retirees Honoured at Annual Dinner	13
Long-service Employees Honoured	9

Training and Development

During the 1989-1990 fiscal year, 1,243 staff attended training workshops for a total of 2,508 days—a departmental average of 2.26 training days per employee. This represents an increase of 0.66 days over the previous year's average of 1.6 days.

Figure AS.1
Attendance at DNR Training Courses



Computer training increased by 84% overall from 108 to 202 participants, with the majority upgrading their skills in *WordPerfect*. The highest participation was in the workshops on Sustainable Development, Effective Performance Management, Essentials of Supervision, Firearm Training, and Communicating with the Native Public.

Resource Focus

The Human Resources Branch continued to inform staff on various issues through the department in the *Resource Focus* newsletter. Feature articles were done on the Minister of Natural Resources and on the 60th anniversary celebration plans. Two new areas were added to the newsletter: "Treevia Test," a quiz designed to test forestry knowledge, and "Library Line," introducing staff to new publications and types of services available at the library.

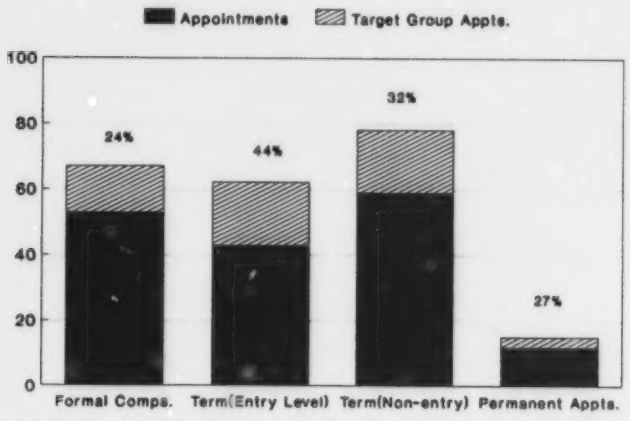
Affirmative Action

All branches developed five-year plans with specific classifications targeted for Affirmative Action candidates.

A new Affirmative Action Committee was established that was instrumental in providing guidance and direction to branches in the development of plans.

A number of initiatives were undertaken, e.g. a number of aboriginal and female candidates/employees were provided with work experience that would enhance their ability to compete for positions in the department.

Figure AS.2
Affirmative Action Recruitment Rates



Occupational Health and Safety

The 1989-1990 fiscal year proved to be very demanding on the Occupational Health and Safety Section. The newly proclaimed workplace safety and health legislation (WHMIS and WHH) necessitated training all employees exposed to hazardous products.

Inspections and work with safety committees had to be curtailed during the last quarter of the year due to secondment of the safety officer to other duties.

Table AS.7
Occupational Health and Safety Activities

Requests for Services and/or Information	283
Training Sessions Conducted	53
Employees Trained	879
Formal Inspections	40
Visits/Informal Inspections	43

Table AS.8
Expenditure by Sub-appropriation 12-1(e) (Human Resources)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance & Over (Under)
Salaries				
Main Estimate		24.26	830,700	
Main Estimate Authority from General Salary Increase XXV			27,400	
Total Salaries	930,400		858,100	72,300
Total Expenditures	201,200		170,800	30,400

Systems Services

The goal of the Systems Services Section is to provide support to the department in the analysis, design and implementation of information processing systems. The section performs feasibility studies on request and provides clients with an assessment of the existing situation and recommendations for improvement. The section provides technical services in the maintenance and modification of existing systems and end-user support. The section co-ordinates the preparation and monitoring of the department's Annual Information Technology System Plan and the information technology procurement services.

In 1989-1990 the section co-ordinated the acquisition of $942,000 worth of software and hardware. Microcomputer systems increased from the previous year's base of 240 to 325 in the current year. This increase required a corresponding increase in support of both the hardware/software and the users. This took up approximately 30% of the section's resources. Systems plans and various communications within the department and with central organizations took up 11% of the section's time. Traditional system development and support of existing systems took up 35% of the section's time. The remaining time involved administrative

processes, being an information resource, and completing feasibility studies and sundry other tasks. Figure AS.3 shows a breakdown of the section's time, with the "D" category representing percentages related to the department as a whole and the "A" category representing support of the Administrative Section in the 12–1 appropriations.

Some of the systems that the section worked on in the past year are as follows.

- *Maintaining and Modifying Multiple Existing Systems.
- *Freedom of Information Access System.
- *Contract Monitoring System.
- *Fur Harvest.
- *Gangsheet Casual Payroll System.
- *Vendor Accounting System.
- *Payroll/Personnel Information System.

The section continued to be responsible for multiple installations of local-area networks, hardware and software for microcomputer systems, and as the training resource to the department in the areas of information processing, hardware, software and related issues. The section serves as a central focus in the dissemination of information relating to issues on systems both from central agencies and from branches. In a very decentralised department it is important to maintain an area where the access to users, information processing professionals, management and central agencies can all funnel information requests.

Integrated use of databases, sharing of common solutions and security will be key areas of focus next year.

Figure AS.3
Systems Services' Roles, 1989-1990

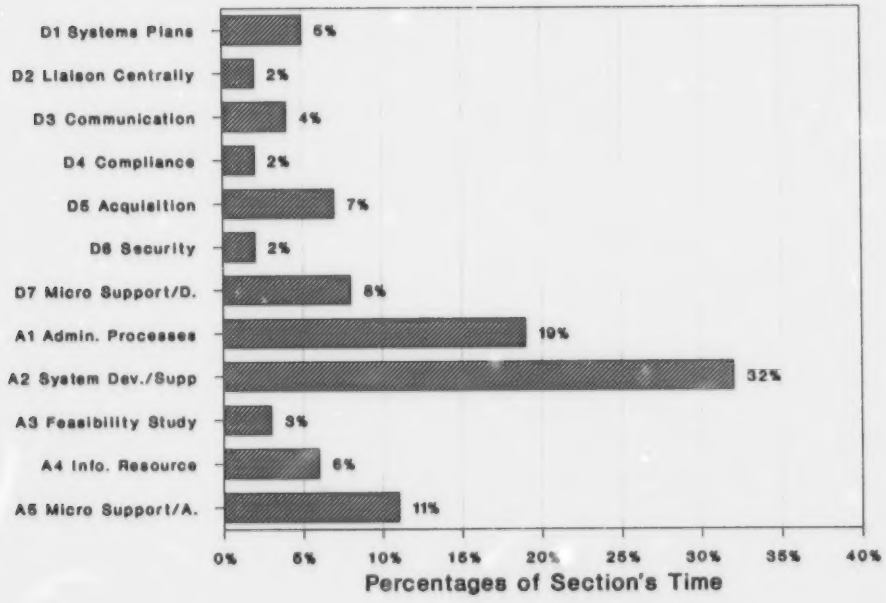


Table AS.9

Expenditures by Sub-appropriation 12-1(f) (Systems Services)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance Over $ (Under)
Salaries				
Main Estimate		7.00	300,500	
Main Estimate Authority from General Salary Increase XXV			7,300	
Total Salaries	304,100		307,800	(3,700)
Total Other Expenditures	40,500		41,900	(1,400)

Operational Support

The objectives of Operational Support are to provide support services to the department and to ensure the efficient and effective use in areas of communication, office and storage accommodation, employee housing, clothing, office equipment, inventories, insurance, vehicles, warehousing, library services and records management.

Under *The Freedom of Information Act*, the 1989-1990 fiscal year saw 36 requests filed for information; 25 were granted access, five were granted partial access; four were denied and two requests were withdrawn. In the complaint filed with the provincial Ombudsman's Office the department's position was upheld.

Inventory records list the department's assets and stores at $36 million and building inventory at $70 million.

Due to the 1989-1990 forest fires, the warehouse saw an increase of 65.3% in transactions over a three-month period. The depot was the primary site for shipping and receiving fire-related goods.

The Inventory Section licensed 1,500 vehicles, all-terrain vehicles and snow machines, and monitored the use of approximately 250 credit cards.

The Library Services Section, whose services are used by departmental staff, other departments and the general public, increased its holdings to 15,000 books, 35,000 reports and 475 current periodicals. In 1989-1990 there were 7,954 users of the library, 9,295 loans and 2,145 inquiries.

Table AS.10

Expenditure by Sub-appropriation 12-1(g) (Administrative Services)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		20.39	696,900	
Main Estimate Authority from General Salary Increase XXV			21,200	
Total Salaries	794,400		718,100	76,300
Total Other Expenditures	112,200		119,600	(7,400)

Internal Audit

The goal of Internal Audit is to provide the management of the department with assessments, observations and recommendations on matters concerning the various aspects of departmental management and operations. To provide these services, Internal Audit's function is divided into four categories: major audits, minor audits, special projects, and day-to-day, continuing and annual audits.

The scope of the reviews and audits covers assessments of compliance with departmental and government policies, directives, legal and regulatory requirements; reviews of the effectiveness of internal controls and asset protection; assessments of the effective and economic use of resources by way of *comprehensive* audits which include a review of goals and objectives of the area under review; and special projects requested by management.

In 1989-1990, Internal Audit, with three staff members available, completed two and initiated two new major audits, completed three minor audits, completed one and continued work on three additional special projects, and spent one staff-year on day-to-day, continuing and annual audits. The results of all completed audits, presented in a final report to the auditee, contain Internal Audit's findings and recommendations, along with pertinent comments from the auditee in response to a draft report prepared for discussion purposes only.

The actual activities carried out by the Internal Audit Section with the approved *Annual Plan for Internal Audit for the 1989/90 Fiscal Year*, show that Internal Audit initiated activities in all categories. The two new major audits started were to be completed in the fiscal year.

Additional time required in the summer audit program in Provincial Parks compromised the completion of one major audit while the other major audit was delayed by a time overrun on one of the minor audits. Special projects, budgeted at 20% of audit hours available, consumed 13%. Audit time of approximately 17 weeks was consumed by unbudgeted or non-audit activities.

Table AS.11

Expenditure by Sub-appropriation 12-1(h) (Internal Audit)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		3.13	150,300	
Main Estimate Authority from General Salary Increase XXV			4,600	
Total Salaries	149,000		154,900	(5,900)
Total Other Expenditures	9,700		10,000	(300)

Section 4

Resource Allocation and Economics Branch

(Communications, Economics and Planning)

The mission of the Resource Allocation and Economics Branch is to integrate and co-ordinate departmental natural resources policy analyses, economic evaluation, planning and resource allocation. The overall objective is to ensure sustainable development of renewable provincial resources.

The branch responds to requests for its services from within the department, from other departments and levels of government, and from the public. The branch provides strategic planning input and economic, analytical and evaluative support as assigned; prepares and co-ordinates activities involving resources allocation, outdoor recreation and tourism either on the basis of routine schedules or as requested; assists in the development of policy and legislation when needed; and regularly establishes and monitors environmental standards and manages environmental licensing of departmental developments.

The branch also administers the province's Ecological Reserves and the Ecologically Significant Areas Program, and the Southern Crown Land Planning Program.

Economic Development

During the year the Crown Land Classification Committee submitted proposals to the Provincial Land Use Committee of Cabinet for the establishment of two Wildlife Management Areas and one Provincial Park. The day-to-day administration of Crown lands is guided by operational codes assigned to each parcel of land by the Crown Land Classification Committee, working in conjunction with regional Bloc Planning Committees (Table CM.1). These committees include representatives from the Departments of Natural Resources, Agriculture, Northern Affairs, Energy and Mines, Rural Development, and Environment.

Each parcel of Crown land is evaluated to identify the opportunities which it affords for sustainable development, and to ensure that the potential for these uses is not diminished by incompatible development on it or on adjoining Crown land. The operational code of each parcel allows for the orderly management and development of that parcel for optimum use.

The codes used in administration are translated into provincial Crown land plans which are prepared in conjunction with local municipal authorities. These plans permit orderly integration of municipal and Crown land planning. During the year the Crown Land Classification Committee received approval from the Provincial Land Use Committee for one provincial Crown land plan and three plan amendments. There are now 16 approved Provincial Crown Land Plans, four draft plans under review, 31 areas under study and review, and a number of plan amendments under consideration (Map CM.1, Table CM.1).

Aside from its responsibilities to the Crown Land Classification Committee, the branch acts on behalf of the department to evaluate the use and tenure of Crown lands, and the proposed changes to the municipal plans and bylaws which affect private lands.

In addition, the branch is responsible for co-ordinating the review of proposed sales and exchanges of agricultural Crown land. During the year the branch processed 65 requests for Crown land sales, and two individual requests for Crown land exchanges, and one for exchange under the Local Government District Lands Exchange Program.

The information obtained in the review process is sent to the Crown Land Classification Committee for final determination. Last year the Crown Land Classification Committee considered 67 sales of agricultural Crown land, recommending approval of 37 and disapproval or deferral of 30. In addition, 23 sales appeals were considered. A number of sales of non-agricultural land, and 69 exchanges of Crown land were also processed.

The conclusions from the branch's analysis of the history and current trends of Crown land acquisition and allocation as parks, community pastures and wildlife management areas are contained in its report, *Acquisition, Sale and Commitment of Crown Land in Manitoba and the Interlake, 1960–1989*.

The branch developed a method for estimating the economic value of timber losses caused by forest fires.

The branch monitored the implications to the department of trade issues, including the *Free Trade Agreement*, *Softwood Lumber Countervail*, and the *General Agreement on Tariffs and Trade*.

The lodges and outfitting industry in Manitoba is dependant on the allocation of fish, wildlife and Crown land. The branch co-ordinates the departmental review of over 150 requests annually for lodge and outcamp operations. The branch represents the department on the Licensing Advisory Committee, and provides advice and guidance in the allocation of the key resources. There are indications that Manitoba Natural Resources may be required to accept more responsibility in the licensing of tourist operations which are dependant on resource allocation. The branch is assisting in the inter-departmental review of this matter.

Map CM.1

Provincial Crown Land Plans, 1990

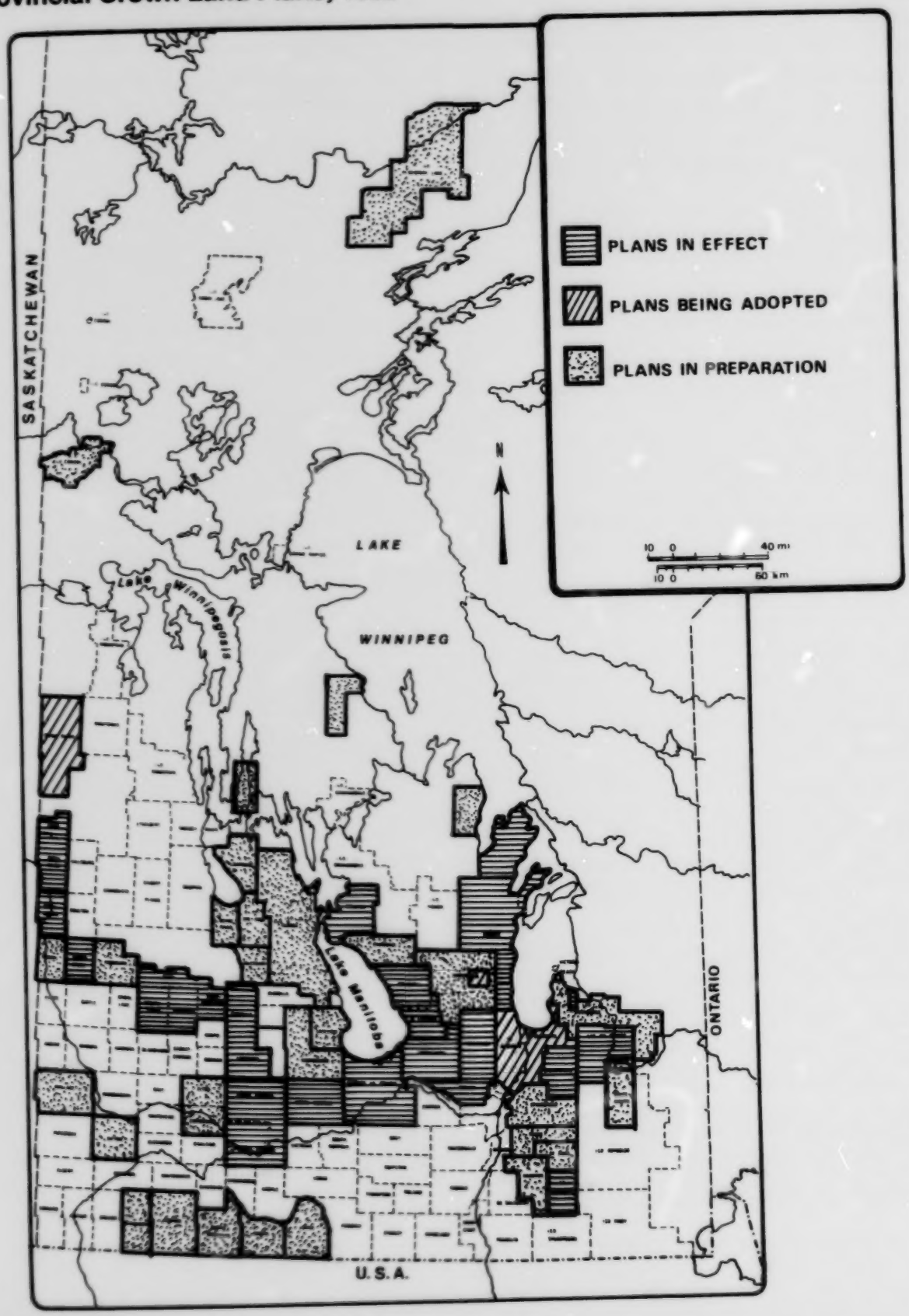


Table CM.1.

Summary of Activities: Crown Land Classification Committee

1. R.M. of La Broquerie. Plan approved.

2. Mars Hill Plan. Amendment approved.

3. R.M. of Swan River. Draft plan under review. Field work completed.

4. Selkirk and area. Draft plan under review. Plan being circulated for review by local government.

5. L.G.D. of Armstrong. Draft plan under review. Draft plan for Twp.18 and 19, Rge.1E only.

6. Del-Win and Morton-Boissevain Planning District. Draft plan under review. Request for plan from Heritage Marsh Advisory Committee.

7. R.M. of Sifton. Planning continued. Request for plan from Heritage Marsh Advisory Committee.

8. L.G.D. of Consol. Planning continued. Field work nearing completion.

9. L.G.D. of Alonsa. Planning continued. Request for plan from Conservation District. Field work completed for southern half.

10. R.M. of Ochre River, Ste. Rose and McCreary. Planning continued. Request for plan from Turtle River Conservation District and Heritage Marsh Advisory Committee.

11. Waterhen Community. Planning continued.

12. Saint Lakes area. Planning continued.

13. R.M. of Tache. Planning continued. Field work nearing completion.

14. R.M. of Ste. Anne. Planning continued. Field work completed.

15. Winnipeg River Planning District. Planning continued. Field work completed.

16. Northern Interlake. Planning deferred.

17. Russell-Binscarth Planning District. Planning continued. Field work completed.

18. R.M. of Lawrence. Planning continued.

19. R.M. of Eriksdale. Planning continued. R.M. has joined Western Interlake Planning District. Field work completed.

20. R.M. of Rossburn. Planning continued.

21. Virden-Wallace. Planning continued. Field work completed.

22. Brandon and Area Planning District. Planning continued. Field work continued.

23. R.M. of Westbourne and R.M. of Lakeview. Planning continued. Request for plan from Heritage Marsh Advisory Committee.

24. Killarney and area, Roblin and Louise Planning Districts. Planning continued.

25. R.M. of Hanover. Planning continued. Field work completed.

26. R.M. of Springfield. Planning continued. Field work completed.

27. R.M. of Whitemouth. Planning continued. Field work completed.

28. L.G.D. of Pinawa. Planning continued. Field work nearing completion.

29. Thompson Planning District. Planning continued.

30. Western Interlake Planning District. Plan review continued. Five-year mandatory review.

31. Neepawa and Area Planning District. Plan review initiated. Five-year mandatory review.

32. Cypress Planning District. Plan review continued. Five-year mandatory review.

33. Duck Mountain Provincial Forest additions. Proposal under review by local government. Forestry Branch request.

34. South Riding Mountain Planning District. Plan review initiated. Five-year mandatory review.

35. L.G.D. of Stuartburn. Planning initiated. Field work completed.

Outdoor Recreation Development

As a part of the municipal planning process, the branch co-ordinates the preparation of planning reports on natural resources to ensure that potential development and the concerns are integrated into local planning activity. The branch is responsible for analyses of the recreational values and opportunities in each particular municipality or planning district.

The branch continued to assist in developing guidelines for the sale, lease or issue of permits for use of Crown land for recreational purposes. The numerous requests generated by this program were reviewed by the branch, and it is expected that these will increase as more recreational facilities are provided by the private sector.

The branch conducted a survey of Manitobans to obtain the participation rates, demands and trends for outdoor recreation to analyse their significance to the department.

The branch reviewed the estimated economic impacts of the proposed national park at Churchill.

The branch continued to review all applications for the sale or lease of, or permits for, recreational Crown land, and participated in the interdepartmental committee established to review recreational land development.

Administration and Enforcement

Legislation and Policy Administration

The branch continued to take a leading role in creating legislation and policy which would protect endangered species and ensure the province's natural resources are managed in an environmentally sound manner.

Research and development have commenced on legislation which will help with more integrated management of the resource base by encompassing the principles and guidelines of sustainable development.

The branch acts as the environmental window for the department, and annually processes approximately 300 applications for environmental licences. The branch co-ordinated the review of applications for licences issued under *The Environment Act*. Comments and concerns pertaining to resource issues were provided to Manitoba Environment for use in the licensing process. A number of these applications are for developments which have a significant environmental impact and require a full environmental assessment.

The branch represents the department on the interdepartmental technical advisory committees. Projects in this category have included the REPAP Five-Year Forestry Management Plan, Bi-Pole 3, Abitibi-Price Eight-Year Forest Management Plan, and others.

The branch administered *The Ecological Reserves Act* and ensured that all ecological reserves were managed and protected in accordance with the Act.

The Endangered Species Act and amendments to *The Ecological Reserves Act*, which the branch helped prepare, were passed by the Legislature and received Royal Assent. Amendments to *The Ecological Reserves Act* were implemented. *The Endangered Species Act* was passed towards the end of the reporting period, and its implementation will begin in the next fiscal year.

Public sensitivity to the environmental impact of developments is increasing, and it can be expected that the branch will have to respond to an increasing number of projects requiring environmental reviews.

Communication Services

The branch continued to provide information on Crown lands to the public, other agencies and levels of government by updating the *Crown Lands Handbook for Agro-Manitoba*.

The Public Information Section of the branch continued to serve the public by providing information, advice and educational materials (Table CM.2).

The responsibility for the distribution of 16-mm films was taken over by Public Library Services, leaving only the videotapes for distribution by the Public Information Section (Table CM.3).

The Educational Projects Section is responsible for providing the public school system with information about Manitoba's resource management programs and natural resource heritage.

The major part of this objective is achieved through the *Mani-Pac* resource education package, which has involved some 10,000 public school children, and through the section's pioneering computer communications programs run on the MINET educational computer network. Educational television programs dealing with resource matters have been produced for and with the co-operation of various school divisions.

Table CM.2
Publications, Signs and Displays

	1987-1988	1988-1989	1989-1990
Publications			
New	20	10	10
Reprinted	28	45	21
Displays			
New	2	5	2
Refurbished	2	1	1
Signs			
Multi-sign Projects	6	13	8
Other	34	20	29
Miscellaneous Print Materials	55	57	44

Table CM.3
Resource Information Provided

News Releases	118
Telephone Calls Received	19,979
Special Events	5
Videotape Bookings[1]	298
Requests for Publications	2,072
Over-the Counter Inquiries	1,002

[1] *The distribution of 16 mm films was taken over by Public Library Services in 1989.*

Management Services

The branch is the focus of the Crown Land Classification Committee, a subcommittee of the Provincial Land Use Committee of Cabinet, which is responsible for determining and implementing the policies for Crown land administration. The Crown Land Classification Committee provides integrated multi-sectoral co-operation by combining the inputs of the several disciplines in Manitoba Natural Resources and by also including representation from the Departments of Agriculture, Energy and Mines, Environment, Northern Affairs, and Rural Development.

The branch chaired and co-ordinated the Resource Allocation Working Group; an inter-branch forum in the department dealing with multi-resource issues. A wide variety of topics was considered, many of which related to environmental licensing under *The Environment Act* and tourist accommodation licensing under *The Tourism Act*. Additional topics reviewed by the group included re-location of provincial roads and highways, routing of new power lines, and allocation of remote lakes for cottaging.

The branch co-ordinated the activities of a Northern Consultation Task Team responsible for making recommendations for clarifying and strengthening the department's consultation policies and processes in northern areas.

The branch analysed the history of forest fires on Indian Reserves, as required for negotiations with the federal Department of Indian and Northern Affairs on a new billing formula for recovering fire-suppression costs on Indian Reserves.

Rural and Community Development

The branch provides secretariat, planning and technical support for the Crown Land Classification Committee. The committee has supervised the preparation and implementation of a system of codes that specify the conditions of use for each parcel of land in southern Manitoba. These codes are identified in a set of maps issued annually by the committee, which also reports on the codes changed from the previous year.

The committee, which includes representatives from all affected government departments, reviewed and approved a number of requests for changes to coding. The development of policy was continued for the leasing of Crown lands and for specific uses of areas under the Crown land plans.

When preparing planning district and municipal planning documents, the branch is guided by the province's policies on use, and by the department's objectives. In 1989-1990, two planning reports on natural resources were prepared at the request of local councils or planning district boards (Table CM.4). A parallel service continued to be provided to the Conservation Districts.

Table CM.4

Natural Resources Planning, 1989-1990

Rossburn Planning District. R.M. of Rossburn, Village of Rossburn. Report completed.	
Ste. Rose Planning District. R.M. of Ste. Rose, Village of Ste. Rose du Lac. Report completed.	

In addition, the branch co-ordinated the assessment and evaluation of a number of draft municipal planning documents, proposed amendments to plans, and directed the department's review of proposed subdivisions. The branch was also a participant in an interdepartmental committee dealing with policy issues pertaining to land use in and around the City of Winnipeg.

The branch participated in the process of estimating long-term water demand in a portion of the Pembina Valley.

Enhancement and Maintenance of the Environment

Preservation of unique, rare and representative samples of Manitoba's ecosystems continued through the Ecological Reserves and Ecologically Significant Areas Programs. The aspect of the program which recognises voluntary protection of privately owned lands and acknowledges special areas of Crown land receiving protection, was continued. Eight new areas, consisting of 3,850 ha of land, were added. Six of these areas are owned or administered by individuals; two are special areas of Crown land. Participants in the program received plaques and certificates recognizing their efforts, and signs to post on their lands to help protect them.

Three new ecological reserves consisting of 39,200 ha of land and water were designated for protection under *The Ecological Reserves Act*. These areas contain a wide variety of ecosystems ranging from sub-arctic tundra, tundra lakes, rivers and ponds to major nesting sites of white pelicans and white-winged scoters. Each is typical of a Manitoba ecosystem.

Two research projects were begun in ecological reserves. One will investigate the regeneration of eastern white cedar following fire, and the other will investigate various aspects of the ecology of colonial nesting birds. Both are independent projects sponsored by reputable scientists.

Direct support for the Canadian Council on Ecological Areas was continued with Manitoba's representative continuing to serve as chairperson. Duties of the chairperson included representing the council at national and international events.

The branch provided organizational and administrative support for the conference on *Environment and Economy – Partners for the Future*.

The branch prepared a comprehensive cost-analysis of solid-waste disposal in Whiteshell Provincial Park.

The branch co-ordinated the department's economic input into the *State of the Environment Report*.

The branch provides a departmental focus for the government's thrust towards sustainable development. This has included assistance in the co-ordination of a major conference on sustainable development, co-ordination of the department's input into sustainable development strategies and active participation on the interdepartmental committees. The strategies include *Land and Water* (Forests, Minerals, Soils, Water), demonstration projects, rural, capital region, northern Manitoba, energy, market incentives and fiscal policy, and the public sector.

This area of activity is expected to expand, and intensify as the government moves from strategy to implementation, and the Department of Natural Resources responds to this issue.

Table CM.5

Expenditure by Sub-appropriation 12-1(c) (Resource Allocation and Economics)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		21.00	813,800	
Main Estimate Authority from General Salary Increase XXV			17,300	
Total Salaries	848,000		831,100	16,900
Other Expenditures	175,900		188,400	
Grants/Transfer Payments	5,000		5,000	
Total Other Expenditures	180,900		193,400	(12,500)

Section 5

Engineering and Construction Branch

The mission of the Engineering and Construction Branch is to provide engineering services and be capable of responding to flood emergencies.

The branch provides engineering investigations, preliminary and detailed designs, surveys, project management services and related support services for all branches of the department, and to municipalities, conservation districts, and other government agencies. The types of works include drains and crossings of provincial waterways, dams, erosion-control works, water distribution and supply systems, sewage collection and disposal systems and a variety of structures such as pumphouses, shower buildings, greenhouses, cold storage buildings, etc. The branch also operates and maintains the provincial flood control facilities, such as diversions and dykes; co-ordinates all flood-fighting activities, and assists the Manitoba Disaster Assistance Board with restoration works and claims from the public.

Table EC.1

1989–1990 Program Summary

Client	Expenditure (000's)
Conservation Districts	1,450.9
Department of Northern Affairs	16.0
Fisheries Branch	3.9
Forestry Branch	7.3
Lands Branch	12.4
Parks Branch	527.9
Water Resources Branch	8625.7
Wildlife Branch	21.3
Total	10,665.4

Table EC.2

Contract Management

Rental Agreements	220
Contracts	16
Construction Orders	33
Hay Permits	600

Administration

The Administration Division provides administrative support services to enable the branch to deliver the necessary engineering and construction works as requested by clients. These services include contract negotiations and administration, accounting operations, yard inventories, vehicle co-ordination, payroll/personnel administration, secretarial services and project control services, all of which help improve work planning/scheduling, resource management and progress reporting.

Table EC.3

Expenditure by Sub-appropriation 12-3(a) (Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		15.00	546,400	
Main Estimate Authority from General Salary Increase XXV			11,100	
Total Salaries	504,300		557,500	(53,200)
Total Other Expenditures	246,800		248,700	(1,900)

Technical Services

The Technical Services Division provides structural design, hydraulic design, sewer and water design, geotechnical engineering, construction inspection and consulting services. Soils laboratory services and maintenance management are also provided by the three sections of this division.

The Design Section was involved in 229 projects of which 116 were plans and specifications, and 112 were investigations and reports. These assignments were for various clients and included 106 projects for outside agencies such as the Department of Northern Affairs, conservation districts and municipalities. Ongoing work was carried out on Pelican Lake regulation, Pasquia Polder III, Washow Bay Phase II, and the Codner Drain. Work was completed on the plans for the Gimli Diversion. The water systems and sewage treatment systems in Provincial Parks are upgraded on a continuing basis. A manual on the design of small dams, prepared during the year, will be used for those to be constructed throughout the agricultural area of the province.

The Geotechnical Section provided soil mechanics and foundation consulting services for various projects. During the year the section conducted 30 geotechnical investigations and reports, on such projects as sewage lagoons, as well as 17 provincial dam inspections and reports. Foundations were designed for various proposed structures, and reports were prepared on the stability of dykes and riverbanks. The section inspected construction sites of 10 projects. The geotechnical laboratory ran 7,683 tests for various clients throughout the government for a statement value of $117,992.20.

The Maintenance Section continued work on improving the maintenance capability of the department. Six operations and maintenance manuals have been completed, as have three sets of record drawings for sewer and water systems in Provincial Parks. To improve flood pumping reliability, 24 operations and maintenance manuals have been completed.

Table EC.4

Geotechnical Dam Inspections and Reports

Water Resources Branch	16

Table EC.5

Design Projects and Reports Completed

Agency	Design Plans/ Specifications	Investigations/ Reports
Conservation Districts	17	24
Dept. of Northern Affairs		4
Municipalities	33	26
Forestry Branch	3	
Parks Branch	5	6
Regional Services Branch		2
Water Resources Branch	57	48
Wildlife Branch	1	2
Total	116	112

Table EC.6

Geotechnical Investigations and Reports

Conservation Districts	5
Department of Northern Affairs	1
Parks Branch	14
Regional Services Branch	1
Water Resources Branch	9
Total	30

Table EC.7

Geotechnical Laboratory Tests

Department of Agriculture (MWSB)	157
Department of Highways	5,575
Department of Natural Resources	1,943
Department of Northern Affairs	8
Total	7,683

Table EC.8

Maintenance Management

Branch	Emergency	Repair	Consultation
Forestry		2	3
Parks	31	100	50
Water Resources	6	15	18
Total	37	117	71

Table EC.9
Expenditure by Sub-appropriation 12-3(b) (Technical Services)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		42.00	1,648,200	
Main Estimate Authority from General Salary Increase XXV			31,600	
Total Salaries	1,664,000		1,679,800	(15,800)
Total Other Expenditures	97,500		97,400	100
Total Recoveries	(91,300)		(55,000)	(36,300)

Regional Engineering Services

This division of the branch carries out construction, project management, surveys, engineering investigation and analysis in support of implementation of studies, and capital and maintenance programs. In addition, this division is responsible for the operation and maintenance of the flood-control systems and for flood-fighting activities, damage assessment and repairs.

Interlake Region

The Interlake Region, encompassing an area of approximately 2,072,000 ha, is bounded on the east by Lake Winnipeg, on the south by the Assiniboine River, on the west by Lake Manitoba, and the vicinity of Cedar Lake on the north. The agricultural portion of the region is divided into 18 watersheds.

Programs and projects undertaken for various clients served by the region are as follows.

Water Resources Branch

Surveys and Investigations. The region completed 37 surveys and investigations for specific services for this branch. These services involved investigation, preliminary and construction surveys, and construction staking for both provincial waterways and municipal drains.

Maintenance and Operation. The maintenance program covered provincial waterways in 18 watersheds totalling 1,483 km (927 miles) and 325 structures, including 11 dams.

Flood Damage Reduction. The region maintained and operated the Portage Diversion and the Lake Winnipeg Dykes. This work included extensive repairs to the Assiniboine River control structure as well as general maintenance and repairs to the diversion channel, dykes and control structures.

Engineering and project management services were also provided for the Gimli Flood Protection Project. Right-of-way and materials were purchased and construction was begun on the diversion channel in Sec. 4-19-4E and Sec. 8–19–4E.

Waterway Construction. During 1989-1990, the region co-ordinated and implemented seven waterway projects.

- *Ben Johnson Drain. Reconstructed approximately 3.8 km of channel N. Sec. 9, 10 and in 16–24–4E.
- *Kris Johnson Drain. Reconstructed approximately 3.8 km of channel in Sec. 31–25–4E and E Sec. 36–24–4E.
- *Ferry Road Drain. Reconstructed approximately 1.2 km of drain N. Sec. 23–24–4E.
- *Blind Bay Drains. Final clean-up and seeding of 1988 work areas.
- *Camper Drain. Reconstructed 4.7 km of channel N. Sec 12–24–7W and N. Sec. 7-24-6W and Sec. 8-24–6W.
- *Swan Creek Drain. Purchased right-of-way for approximately 11 km of channel scheduled for reconstruction starting 1990.
- *Lake Francis. Constructed approximately 1.2 km of channel connecting Cramer Lake with Lake Francis.

Bridge Replacement Program. The region was responsible for the replacement of four bridges with culvert crossings

at the following locations.

*Morweena Drain	N.E. 27–23–1E.
*Ditchfield Drain	E. 23–26–8W.
*Netley Creek	N.E. 31–16–3E.
*Wavey Creek	N. 14–14–2E.

Culverts were purchased for future installation at Meadows Drain at N. 25–12–2W.

Wildlife Branch

Surveys and Investigations. The region completed two surveys and two investigations related to specific requests for services.

Maintenance and Operation. The region successfully completed a maintenance program in Oak Hammock Marsh.

Parks Branch

Surveys and Investigations. The region completed three surveys and two investigations.

Forestry Branch

Surveys and Investigations. Two surveys were completed.

Construction. The region installed a new barrier and repaired an existing one on Kinwow Bay Road. Also installed were a culvert and offtake ditch on Kinwow Bay Road.

Manitoba Government Services

Surveys and Investigations. The region completed one survey related to specific requests for service.

Eastern Region

The Eastern Region is east of the Red River, east of Lake Winnipeg and extending north through Ponton and Lynn Lake to Churchill, then east to the Ontario border and south to the United States border.

Water Resources Branch

Surveys and Investigations. The region responded to 22 specific requests for service.

Maintenance and Operation. A maintenance program was completed covering 1,147 km of provincial waterways in 20 watersheds, including 17 provincial dams.

Flood Damage Reduction. The region maintained and operated the Red River Floodway and Valley Town Dyking Systems at Emerson, Dominion City and Ste. Adolphe.

Also provided were engineering and project management services for two major construction projects, namely, the Emerson Dykes and the Ste. Adolphe Dykes.

Waterway Construction. During 1989-1990, the region co-ordinated and implemented five waterway construction projects.

- *Ridgeville Drain. Section 32–1–4E saw the completion of a seeding project.
- *South Lateral Drain north of Section 5–7–5E. Supplied and installed approximately 450 metres of 300 mm and 425 metres of 200 mm pipeline to alleviate groundwater problems.
- *D20 Drain north of Sections 13, 14 and NE 1/4 15-7-3E. Completed seeding project.
- *Cooks Creek Diversion. Completed with minor clean-up and seeding north of 5, 6–11–6E and north of 1 and 2–11–5E.

Bridge Replacement Program. The region was responsible for the replacement of five structures with culverts.

- *Vita Drain. N.20–2–7E. Installed culverts.
- *Upper South Lateral Drain. N 23–6–5E. Installed culverts.
- *St. Malo Canal. E.33–4–4E. Purchased and installed culverts.
- *Tourond Creek. N. River lot 624. Purchased culverts.
- *Bear Creek. E.14–13–8E. Installed one culvert.

Conservation Districts

Engineering services provided to the Cooks Creek Conservation District were the following.

Surveys and Investigations. The region responded to 17 specific requests for service.

Maintenance Program. A maintenance program for three subdistricts involving some 1,036 km of board drains was successfully completed.

Construction Program. Major culvert installations were completed at the following locations.

- *Carr's Creek, south of 27–11–4E.
- *Oakwood Road, north of 20–11–6E.
- *West of 31–10–6E.
- *West of 30–10–6E.

Crown Lands

Construction. The region co-ordinated and implemented the following three construction projects.

- *Pinawa Bay Subdivision. Road upgrading in Sec. 34–15–12E.
- *Albert Beach. Floodproofing.
- *Gronsdin Point. Boat-launching ramp.

Forestry Branch
Surveys and Investigations. The region responded to seven requests for such services as designs for a bunkhouse at Wekusko and a pesticide storage building at Hadashville.

Fisheries Branch
Surveys and Investigations. The region responded to a request for assistance to control Hamilton Creek near Falcon Lake.

Municipal Services
Surveys and Investigations. The region responded to 12 specific requests from the Water Resources Branch in response to resolutions from municipalities and local government districts.

Ducks Unlimited
Surveys were conducted in the Rat River area north of Vita in response to a request from the Water Resources Branch on behalf of Ducks Unlimited.

Parks Branch
The region conducted engineering investigations and surveys, and provided construction management services for projects in Whiteshell, Nopiming and Birds Hill Provincial Parks, and in St. Malo and Paint Lake Provincial Recreation Parks.

Surveys and Investigations. The region responded to 30 specific requests for service initiated by the Parks Branch and the Regional Services Branch.

Construction. During 1989-1990 the region co-ordinated and implemented 12 construction projects.

- *Falcon Lake. Sewer and water main upgrading in Block D and Bogey Bay.
- *West Hawk Lake. Subdivision road improvements.
- *Brereton Lake. Electrical service upgrading to 46 campsites.
- *Meditation Lake Pit. Crushing and stockpiling gravel.
- *Opapiskow Lagoon. Upgrading.
- *Dorothy Lake Lagoon. Upgrading.
- *Otter Falls Lagoon. Expansion and upgrading.
- *Paint Lake Lagoon. Expansion.
- *Paint Lake. Water supply modifications.
- *Paint Lake. New well.
- *Nutimik Lake Maintenance Shop. Superstructure.
- *Falcon Lake. South Shore Road improvements.

Southwestern Region

The headquarters of the Southwestern Region is in Neepawa, with a field office at Portage La Prairie. The region extends from Riding Mountain to the north, the United States border to the south, Lake Manitoba to the east,and the Saskatchewan border to the west. Programs and projects undertaken for various clients served by the region are as follows.

Water Resources Branch
Surveys and Investigations. The region completed three surveys and four investigations for this branch.

Maintenance and Operations. The region successfully completed a maintenance program covering provincial waterways in five watersheds totalling 1.6 km and seven dams.

Bridge Replacement Program. The region replaced three structures, including a bridge in Sec. N15–8–26W, and corrugated metal pipe in Sec. N 22–19–14W.

Conservation Districts
The Southwestern Region was responsible for providing a variety of engineering services to the Whitemud Watershed and Turtle Mountain Conservation Districts.

Surveys and Investigations. Over 50 drainage-related problems and 63 proposed water storage projects were dealt with.

Maintenance and Operations. Resloping and clean-outs were carried out on about 40 km of drains and runways. Mowing and spraying were carried out on over 320 km of drains and runways.

Construction. Fifteen small dams were built in the Whitemud, and 22 in the Turtle Mountain Conservation District. Also completed were 3.2 km each of the Grass River and the Waldersee Drain. About 16 km of smaller drains were reconstructed.

South Central Region

The South Central Region lies south and west of Winnipeg in some of the prime agricultural land in the province. The region is situated in the western half of the Red River Basin with tributaries such as the Aux Marais, Plum, Morris, Boyne and La Salle flowing through the region into the Red River. Roughly square in shape, the region has an area of over 11,000 sq. km and is divided into 15 watersheds. On the south the region is bounded by the

United States, and to the east, north and southwest by the Red, Assiniboine and Pembina Rivers, respectively.

Programs and projects undertaken for various clients served by the region are as follows.

Water Resources Branch

Surveys and Investigations. The region completed 68 requests for services. These involved preliminary and construction staking for both municipal and water resources surveys of some 224 km of drainage work projects, crossing replacement surveys and water investigations.

Maintenance and Operations. The region completed the normal maintenance program on the provincial waterways network in 15 watersheds involving, at various times, the councils of 17 municipalities. The program included mowing, spraying, seeding, repairing structures on 1,280 km of provincial waterways with 320 bridges, 40 gradient control structures and 17 dams.

The maintenance and year-round operation of the Assiniboine / La Salle River Enhancement Project is an important part of this program. It involves the operation of pumps at three sites on the Assiniboine River to supply water for stock watering, market gardening and domestic use after treatment at the Sanford Water Treatment Plant.

Flood Damage Reduction. The region maintained and operated the West Dyke of the Red River Floodway and the Valley Town Dyking System at St.Jean, Morris, Letelier, Rosenort and Brunkhild. This involved the regular maintenance on some 59 km of dykes and the operation of pumps that are an integral part of the interior drainage system of these towns.

Waterway Construction. During 1989-1990, the region co-ordinated and supervised four waterway construction projects.

- *Barrickman. No. 2 Drain Diversion in River Lots 87 through 90 inclusive, in the Parish of St. Francis Xavier in the R.M. of Cartier. In conjunction with the Land Acquisition Branch all the right-of-way was purchased. A gradient control structure and concrete low-level crossing were constructed.
- *South Shannon Creek. In Sec.2, 3 and 4–4–4W in the R.M. of Roland. In conjunction with the Land Acquisition Branch the right-of-way for this project was purchased.
- *Aux Marais River. In Sec. 4, 9, 16, 21, 22, 25 and 26–1–1E in the R.M. of Rhineland. The channel was excavated and the material was spread through Sec. 25 and 26–1–1E. Also constructed were four geo-web low-level crossings and a bridge extension.
- *Carman Diversion. In Sec. 25, 26 and 36–6–5W and 31, 32, 33 and 34–6–4W of the R.M. of Dufferin. The right-of-way in Sec.31, 32, 33 and 34–6–4W was purchased. The P.F.R.A. supervised the contracts for the construction of the channel and five drop structures in these sections.

Bridge Replacement Program. The region replaced four timber bridges with culverts at the following locations.

*Codner Drain	N34–8–2W.
*St. Joseph Drain	E19–2–1E.
*4-N Dykes	E-10–6–4W.
*Allison Drain	E-11–8–2W.

Also, the culverts were purchased and stored for future installation at the following locations.

*Allison Drain	NE 36–7–2W.
*Allison Drain	E 17–8–2W.
*Domain Drain	N 17–8–2W.
*Menard Drain	NE 9–9–2W.
*Boyne Channel	NE 34–6–2W.
*Scott Drain	W 15–10–4W.

Water Resources Administration Permits Program. Since September 1979, when the first permit was issued for construction of a building in the Red River Valley Designated Flood Area, the region has supplied a survey service. Prior to construction of a structure the applicant is contacted and arrangements are made to set a level at his/her site for the finished floor. After construction and landscaping are complete a final site survey is done.

Table EC.10 shows the services rendered in 1989-1990.

Manitoba Disaster Assistance Board

The South Central Region began a two-year study of the flood protection levels of buildings in the Red River Valley Flood Designated Area. A primary question in this study is "Where are the weak spots in the flood protection of rural inhabitants in the study area?" Survey crews were able to obtain information about all buildings in the R.M. of Morris and the R.M. of Montcalm. This involved surveys of 477 farm sites and businesses. The municipalities of Rhineland, Franklin, De Salaberry, Macdonald and Ritchot are scheduled for completion in the second year.

Parks Branch

The region made arrangements to have the Manitoba Water Services Board in Brandon conduct tests of the existing multiple-well system at Stephenfield Provincial Recreation Park. As well, auger test drilling was done at several sites within the park to locate well sites for future development of a groundwater supply.

Table EC.10

Water Resources Administration Permits Program

Permits Issued	55
Permits Requiring Survey Service	54
Permits on East Side of Red River	31
Permits on West Side of Red River	23
Compliance Surveys for 1989-1990 Permits	0

***Note:** As of March 31st 1990, 590 permits had been issued since the program began.*

Western Region

The Western Region is bounded on the south by Riding Mountain National Park, on the west by the Manitoba-Saskatchewan border, on the east by Lake Manitoba north of McCreary, and on the north to include the Flin Flon / Snow Lake area.

Water Resources Branch

Surveys and Investigations. The region responded to 25 requests from this branch for services.

Maintenance and Operation. The region successfully completed a maintenance program covering provincial waterways in 17 watersheds totalling 648 km and 180 structures, including 22 dams and four pumping stations in the Pasquia Land Development area.

Flood Damage Reduction. The region maintained and operated the Shellmouth Dam and Saskatchewan River Dykes. The region also finalised construction of the Ste. Rose Flood Protection works and put it into operation.

Canada-Manitoba Agri-Food Development Agreement. The region provided engineering and management services to purchase the right-of-way for the Pasquia-Polder III development, and to construct the Pasquia Lake Drain pumping station and a reach of the Pasquia Lake Drain.

Waterway Construction. During 1989-1990 the region co-ordinated and implemented two land drainage projects.

- *Community Pasture Drain E 9, 16,21–28–20 W.
- *Jackfish Creek Drain (cleanup) in 17, 20– 24–18 W.

Bridge Replacement Program. The region requisitioned material for three culvert crossings for installation in 1990-1991.

- *Jarosz Drain WS 53 – E32 – 36 – 24 W.
- *Jarosz Drain WS 53 – E29 – 36 – 24 W.
- *Fishtown Creek WS 90 – NE12 – 40 – 25W.

The region contracted the removal of an unsafe steel-and-timber bridge over the Wilson River E 29 – 25 – 19 W.

Turtle River Watershed Conservation District

Surveys and Investigations. The region has provided engineering assistance and related surveys in response to 26 requests.

Maintenance and Operations. The region maintained the Wilson Creek Weir.

Construction. The region provided engineering and project management services on four board projects:

- *Hansen Creek. Right-of-way purchase.
- *Amman Drain. Clean-out.
- *Ochre Beach. Canal and boat-launching ramp.
- *Turtle River. Boat-launching ramp and access.

Alonsa Conservation District

Surveys and Investigations. The region provided surveys and engineering assistance in response to 10 requests including a major survey on the Mellonville Drain of which 43 km were completed.

Construction. The region provided engineering and project management services on the Reed Creek Cleanout in 4 – 23 –11W.

Parks Branch

The Western Region has provided engineering investigations, survey and construction project management services for projects in Duck Mountain Provincial Park, and in Manipogo and Bakers Narrows Provincial Recreation Parks.

Construction. The region provided engineering and project management services as follows.

- *Childs Lake Bay. Three septic fields.
- *Bakers Narrows / Flin Flon. Sewage lagoon.
- *Manipogo. Piles for dock.

Northern Affairs

The region provided investigation, surveys and construction project management services for the following projects.

- *West Waterhen River Bridge Replacement.
- *Bakers Narrows/Flin Flon Lagoon.
- *Red Deer Lake Access Road. Culvert Installation.

Fisheries Branch

Surveys and Investigations. Churchill River Dam (North Indian Lake).

Construction. The region provided project management services for the following.

- *Black Beaver Lake. Culvert installation.
- *Two Mile Lake. Washout repairs.
- *Edwards Creek. Rock fish riffles.

Lands Branch

The region provided surveys and investigations in response to six requests for services.

Table EC.11

Expenditure by Sub-appropriation 12-3(c) (Regional Engineering Services)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		106.26	3,773,300	
Main Estimate Authority from General Salary Increase XXV			92,200	
Total Salaries	3,837,200		3,865,500	(28,300)
Total Other Expenditures	810,100		1,017,300	(207,200)[1]
Total Recoveries	(92,100)		(325,000)	232,900[1]

[1] *Funding of $250,000 provided for engineering services for the construction of a sewage lagoon at Bakers Narrows was not used as the project was deferred. This deferral resulted in reduced recoveries for the same project.*

Section 6

Fisheries Branch

The mission of the Fisheries Branch is to ensure sustainable development of provincial fisheries resources for present and future generations of Manitobans.

The branch develops and implements fisheries management programs to provide the greatest benefits to Manitobans by maintaining or enhancing fish populations and habitat; by monitoring effects of harvest and habitat alterations on fish populations; and by allocating the fishery resource to ensure the best return. The branch also administers the Northern Fishermen's Freight Assistance Program for commercial fishermen and provides direction and administrative costs for the Manitoba Fishermen's Loan Program administered by the Manitoba Agricultural Credit Corporation.

Administration

The *Five Year Report on Fisheries* was completed and tabled in the Legislature as required. The report reviews the status and management of Manitoba's fish resources over the past five years (1984-1985 to 1988-1989) and examines future challenges in maintaining and improving provincial fisheries.

The re-organization of the Fisheries Branch neared completion during the 1989-1990 year. The branch still consists of three principal sections, but the responsibilities of these sections have been altered and considerably expanded; section names being changed accordingly. The Regional Fisheries Management Section will ensure delivery of effective and consistent management programs within the branch. It will be responsible for fisheries assessment. The Sport and Commercial Section will develop, maintain and evaluate branch programs relating to resource use. The Habitat Management Section will protect and maintain, or improve, fish habitat.

Table FI.1

Expenditure by Sub-appropriation 12-8(a) (Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		5.00	224,300	
Main Estimate Authority from General Salary Increase XXV			4,500	
Total Salaries	223,000		228,800	(5,800)
Other Expenditures	55,700		40,700	
Grants/Transfer Payments			6,000	
Total Other Expenditures	55,700		46,700	9,000

Regional Management

The Regional Management Section manages fisheries in the six fisheries regions of Manitoba, within the scope of the branch's policies and strategies. This section is the primary delivery unit of sport, commercial and habitat management programs and, as such, is the main interface between users and the Fisheries Branch. In 1989-1990 each region developed a regional fisheries management strategy which established short-term objectives and specified action to achieve them.

The section continued with the monitoring and assessment of fish populations, fishery use and habitat, and worked with user groups towards co-operative management. Major commercial fisheries monitored and assessed in 1989-1990 included Lake Winnipeg, Lake Manitoba, Lake Winnipegosis, Playgreen Lake, South Indian Lake, Lake St. Martin and Cedar Lake. Reports on the status of these fisheries are being completed and will be available on request. Land-use activities on aquatic environments, such as stream-crossing construction and forestry harvest, were monitored to ensure the impact on fisheries was minimised or mitigated. Consultation on a variety of topics including regulations, management initiatives and stocking, was continued with all major user groups in the regions. Other ongoing activities included the administration and issue of commercial fishing licences, sport fishing derby permits and fish farming permits.

Some of the special or non-recurring projects undertaken by the Regional Management Section in 1989-1990 were as follows.

*A creel survey of winter sport fishing on Lake Manitoba was conducted with the assistance of the Manitoba Wildlife Federation to determine angler harvest of sauger, perch and walleye in relation to the commercial harvest during the Lake Manitoba winter perch fishery.

*A creel survey was conducted on Lake of the Prairies, in co-operation with Fish Futures Inc., to record harvest and determine effects of a slot limit requiring all walleye between 45 cm and 70 cm be released.

*Intensive tagging of catfish and walleye in the Red River, begun in 1988 and completed in 1989, will provide information on stock sizes, harvest and habitat use. The Red River study has increased awareness of this fishery in Minnesota and North Dakota, and prompted co-operative research and management between jurisdictions.

*Lake aeration projects in several sport fisheries, including Oak and Pelican lakes, in southwestern Manitoba maintained oxygen at sufficient levels during winter to allow survival of fish under low-water conditions caused by drought.

*Rehabilitation efforts on Lake Dauphin continued with stocking of walleye fry and fingerlings, rehabilitation of spawning habitat in the Mink and Wilson rivers, pike removal, and refocusing of commercial harvest from walleye to pike.

*Efforts to rehabilitate walleye stocks continued on Lac du Bonnet with the successful construction of a new spawning reef.

*A quota entitlement system for the allocation of commercial fishing licences was introduced for the Lake Winnipegosis open water fishery to make it more economically viable.

Table FI.2

Expenditure by Sub-appropriation 12-8(b) (Regional Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		20.00	764,700	
Main Estimate Authority from General Salary Increase XXV			22,100	
Total Salaries	734,900		786,800	(51,900)
Total Other Expenditures	254,300		245,900	8,400

Fish Culture

Fish stocking programs developed by the Habitat Management Section are used as a tool to maintain and enhance provincial fisheries. As in previous years, stocking was used to supplement natural reproduction where high sport and/or commercial harvesting occurs, to create fisheries where natural reproduction is not possible or where winterkill has occurred, to introduce species to lakes to create new self-sustaining fisheries, and to provide variety in species for Manitoba's anglers.

In the spring of 1989, 115 million walleye eggs were collected from seven spawn collection sites. Swan Creek, from where 74 million eggs were collected (64.1% of the total), was the primary source of walleye spawn. Walleye eggs were incubated at four hatcheries (at Swan Creek, Grand Rapids, Methley Beach and Whiteshell) and produced a total of 65 million walleye fry; an overall survival rate of 56.6%. Of these fry, 76.6% were allocated to commercial fisheries, 7% to sport fishing rearing ponds in the Southwest Region, and 16.4% to stocking sport fishing waters.

The Grand Rapids and Whiteshell fish hatcheries are the two provincial salmonid-producing facilities. This year the operation of the Grand Rapids fish hatchery was extended to year-round with financial assistance from Manitoba Hydro. In co-operation with the Fisheries Branch the Friends of the Whiteshell conducted 1,009 visitors (60 tours) through the Whiteshell fish hatchery at West Hawk Lake. Informal tours had been given to visitors by hatchery staff prior to 1977, but were discontinued due to problems with fish diseases. Tours resumed this year.

Adult pike were stocked in ponds at the Fort Whyte Centre for Environmental Education, and in many small ponds and reservoirs in the southwest, to provide angling opportunities where none had existed previously. The pike were captured as part of the Lake Dauphin pike removal project or, incidentally, at walleye spawn-taking camps.

Table FI.3
Distribution to Sport Fishing Waters from Fish Hatcheries, 1989-1990

Species	Fry	Fingerlings	Yearlings	2-year old and adults
Black crappie	—	202	—	9
Brook trout	—	—	81,000	—
Brown trout	—	135,000	92,000	14,650
Kokanee Salmon	—	45,000	—	—
Muskellunge	100,000	—	—	—
Northern pike	—	—	—	2,533
Perch	—	—	28,000	—
Rainbow trout	—	79,900	116,220	46,250
Walleye	10,700,000	22,122	—	—

Table FI.4
Expenditure by Sub-appropriation 12-8(c) (Fish Culture)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		18.10	570,700	
Main Estimate Authority from General Salary Increase XXV			15,000	
Total Salaries	526,400		585,700	(59,300)
Total Other Expenditures	220,000		161,200	58,800[1]

[1] *Operation of the Grand Rapids Fish Hatchery was extended to year-round production under a five-year agreement with Manitoba Hydro, which funding is 100% recoverable from Manitoba Hydro.*

Fisheries Enhancement

Fisheries enhancement activities within the Habitat Management Section serve to assess, maintain and improve fish habitat. In 1989-1990 new short-term projects were undertaken, and several large-scale projects were continued.

Field monitoring to determine the ecological impacts of hydroelectric development of the Churchill-Nelson river systems on fisheries resources, as mandated by Claim 18 under the *Northern Flood Agreement*, were concluded in 1989. The information is now being analysed and will be presented in a series of technical reports. An analysis of mercury data for fish sampled from the Churchill River diversion lakes has indicated that mercury levels may be declining. Mercury levels of larger predacious species, however, are still too high for regular consumption or commercial sale. There is also evidence that mercury contaminants produced within a reservoir are noticeable for a short distance downstream. Influx of more dilute water from the Churchill River has reduced the levels of nutrients and other chemical elements in waters along the diversion and as far downstream as Stephens Lake. There is evidence that this change in water quality has reduced the productivity of phytoplankton and zooplankton in areas influenced by the Churchill River diversion. The effect of

this reduced basic biological productivitiy on fish production is being investigated.

Fisheries studies pertaining to hydroelectric development on the Lower Nelson River system continued in 1989-1990. The studies, begun in 1985, have focused on assessing fish stock abundance and habitat use in pre- and post-impoundment conditions. Potential mitigation and enhancement projects, such as transfer of brook trout to depleted areas, have been investigated. In future, these studies will be conducted by consultants to Manitoba Hydro. The Fisheries Branch will assume an advisory role.

Information on waterbodies within all watersheds in the Western, Southwestern, Interlake and East/Southeastern Regions was compiled and incorporated into Manitoba's Fish/Habitat Inventory and Classification System. The system will allow managers to have access to the information and survey data collected over the years and will assist in the management, rehabilitation and enhancement of Manitoba's resources and habitat.

The Fisheries Branch assisted the Manitoba Habitat Heritage Corporation, a non-profit organization governed by *The Manitoba Habitat Heritage Act*, with several projects to restore or enhance fish habitat. Aeration equipment was purchased to protect the Russell Reservoir from winterkill. Construction of the partial-lake aeration system in Shoal Lake was completed and operated effectively during the 1989-1990 winter. The corporation co-operated with local municipalities and citizens to successfully operate a temporary aeration system on Oak Lake.

Other Manitoba Habitat Heritage projects included preparation of a field manual for stream habitat classification and rehabilitation; sponsorship of a hydrology and fish habitat course; rehabilitation of Edwards Creek for walleye spawning; and construction of water-level controls in Two-Mile, Beaver and Edgar Lakes to enhance fish populations.

Table FI.5

Expenditure by Sub-appropriation 12-8(d) (Fisheries Enhancement)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		20.00	683,300	
Main Estimate Authority from General Salary Increase XXV			18,300	
Total Salaries	685,600		701,600	(16,000)
Other Expenditures Main Estimate			228,900	
Main Estimate Authority from General Salary Increase XXV			1,700	
Total Other Expenditures	170,900		230,600	(59,700)

Commercial Fishing Management

During the open-water fishery of 1989, and the winter fishery of 1989-1990, commercial fish production in Manitoba was 13.6 million kg, down 4% from the previous year. The total payment of $4.6 million made by the Freshwater Fish Marketing Corporation (F.F.M.C.) for the 1988-1989 fiscal year was down considerably from the record final payment last year of $11.4 million. The F.F.M.C. reported that declining demand for fish, increasing competition and high production were the main reasons for this drop.

Several organized sport fishing groups (Concerned Anglers of Manitoba, Red River Advisory Group, Manitoba Wildlife Federation) perceive a conflict between sport and commercial fishermen on the major lakes and their tributaries, especially the Lake Winnipeg / Red River area. Some of the sport fishing groups have been lobbying for additional restrictions to be placed on Lake Winnipeg's south basin commercial fishery. The commercial fishermen are aware of these developments and are concerned. Representatives from the Lake Winnipeg Fisheries Management Advisory Board initiated discussions last year and asked for legislative changes to

protect their interests. They would like to ensure that the current management regime would not be changed without first consulting with them, and to place the quota entitlement system in legislation to provide them with long-term security. The Fisheries Branch will also work with sport fishing groups to document their rights and privileges during this process.

The open-water commercial fishery on Lake Winnipegosis was reopened in 1989 after a three-year closure which had been mutually agreed to by the fishermen and the Province. The fishery was closed because continued overharvesting had brought about biological and economic declines in the fishery and, in particular, a drastic reduction in walleye stocks. When the fishery reopened, a program was implemented to buy licences and the associated quotas from fishermen, based on fair market value of the potential fish harvest. The licences of 18 commercial fishermen were purchased in 1989. The program is intended to reduce fishing on the lake, and to improve walleye stocks, thereby providing greater economic returns to the remaining 29 fishermen. The 1989 open-water season was disappointing to the commercial fishermen who only harvested 80,000 kg of walleye. The overall harvest of walleye (both open-water and winter seasons) was 94,000 kg. This was not surprising, however, since during the closure significant spawning did not occur until the spring of 1987. This cohort will not contribute significantly to the commercial harvest until 1991.

In recent years, the Sport and Commercial Section has developed programs for 3"-mesh net midwinter fisheries on Lakes Winnipegosis and Manitoba. These fisheries allow fishermen to harvest perch which are not easily captured in the nets with larger mesh used during other seasons, while limiting adverse effects on stocks of other species. The perch fisheries can provide significant additional income to commercial fishermen, and are especially important when stocks and prices of traditionally caught species are low.

In 1990, the second season of the 3"-mesh midwinter fishery on Lake Winnipegosis, 90,000 kg of perch was captured; and $170,000 was paid to commercial fishermen. The fishery was suspended in March because levels of a parasite, a larval trematode called blackspot, were greater than the federally set standard of less than 20 cysts per 100 lbs. of fillets. The parasite has no effect on the health of humans, but is undesirable because it appears like black sand grains in the fillets. The Fisheries Branch will conduct investigations into the level of infection in various areas of Lake Winnipegosis in 1990. If, as commercial harvest records indicate, some areas have greater infection rates than others, those may be closed during the 1991 season to maintain quality of the catch within the federal standard.

On Lake Manitoba in 1990, the 3"-mesh midwinter fishery produced 245,857 kg of perch (34% of all species harvested), 389,429 kg of sauger (54%) and 92,907 kg of walleye (12%). The fishery generated an additional $1,300,000 for the 1990 season. Angling groups and some commercial fishermen have expressed concern over the potential impact of the 3"-mesh net fishery on walleye and sauger stocks. The Sport and Commercial Section is working on a Lake Manitoba fisheries management plan that will take into consideration the interests of all user-groups. Extensive monitoring of the commercial fishery, and a creel census to determine angler harvest, were conducted during the winter of 1989-1990. The results will be discussed with all interested parties before decisions are made on the future of the 3"-mesh net fishery.

In recent years a commercial fishery, dependent on walleye stocking, has been developed on Chitek Lake in the Interlake. During the 1989-1990 winter season commercial fishermen on Chitek Lake harvested 72,447 kg of walleye, generating approximately $195,000 for the local economy of Waterhen. The previous best yield from this 7,400-ha lake was 14,000 kg. The commercial fishermen of Waterhen Lake contribute monies from their Chitek Lake production towards a fund used to pay transport costs for annual stocking on this and surrounding lakes.

Table FI.6.

Expenditure by Sub-appropriation 12-8(e) (Commercial Fishing Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		5.00	205,600	
Main Estimate Authority from General Salary Increase XXV			4,100	
Total Salaries	172,000		209,700	(37,700)
Total Other Expenditures	226,000		35,000	191,000[1]

[1] *Continuous over-fishing had resulted in the biological and economic decline of the Lake Winnipegosis commercial fishery. The open-water season had been closed from 1986 through 1988 and reopened in 1989. To eliminate the possibility of further over-harvesting, the department undertook a one-time buy-back of commercial fish quotas for $10,000 per quota*

Sport Fishing Management

Sport fishing management encompasses recreational and economic (e.g. lodges) activities, as well as the related areas of commercial bait fishing and trout farming.

In 1989-1990 there were 27 licensed trout-farming operations in Manitoba, and 300-400 hobby trout-farming operations in private waters. Four organizations and/or companies distributed fish to fish farmers in the spring.

Forty-eight fishermen were licensed for commercial bait fishing in 1989-1990. Production of frozen bait fish was estimated at 68,000 kg. The 18 live-bait fishermen produced about 65,000 dozen bait fish. Thirty-four dealers were licensed to sell live bait.

The branch is promoting responsible use and conservation of sport fisheries as improved technology and large numbers of fishermen place increasing pressure on limited fish stocks. The Sport and Commercial Section has developed programs to control angler harvest of fish without limiting angling opportunities. The public has responded favourably to programs such as the conservation licence program. In 1989-1990, 43.6% of anglers purchased conservation licences.

In maintaining the responsible use/conservation objective two significant changes will be introduced in the *1990 Sport Fishing Regulations*. Anglers will be required to use barbless hooks in all Manitoba waters by 1990. The Province is going barbless to promote catch-release fishing and reduce fish losses caused by excessive handling. Manitoba is the first jurisdiction in North America to pass an across-the-board barbless regulation. The limits for pike, walleye and sauger will be reduced from eight to six, and for lake trout from three to two. In addition, all walleye, channel catfish, trout and smallmouth bass caught during fish derbies will have to be released. The angling public, and most angling groups, support these changes to the regulations.

The *1990 Sport Fishing Guide* was published by Fish Futures Inc. in conjunction with Manitoba Natural Resources. This contract served as a means of fund-raising for Fish Futures, a non-profit organization dedicated to fisheries preservation and enhancement and public education, and allowed production of the guide at a saving to the branch. Significant alterations were made to the 1990 guide that included a 6"-8" enlarged size, a fish identification chart, expanded classified advertising and a list of authorised repair depots. All profits from the publication of the 1990 guide will be devoted by Fish Futures Inc. to enhance freshwater fisheries in Manitoba. The guide was well received by anglers.

The branch continues to encourage resource users to participate in management of sport fisheries. Lake-specific management plans developed in consultation with local users have been instrumental in introducing new and innovative changes to regulations pertaining to sport fishing on various lakes. Extensive public meetings were held with lodge operators, local game and fish

Table FI.7

Angling Licence Sales and Revenue, 1980-1981 to 1989-1990

Year	Resident Licences			Resident Conservation Licences			Total Resident Licences	
	Number	Fee	Revenue	Number	Fee	Revenue	Number	Revenue
1980-1981	159,584	$ 3.30	$ 487,384.20				159,584	$ 487,384.20
1981-1982	159,233	3.30	486,394.90				159,233	486,394.90
1982-1983	164,384	5.00	741,087.50				164,384	741,087.50
1983-1984	157,724	5.00	710,986.50				157,724	710,986.50
1984-1985	154,489	5.00	696,541.50				154,489	696,541.50
1985-1986	154,602	6.00	851,476.00				154,602	851,476.00
1986-1987	158,412	6.00	872,568.00				158,412	872,568.00
1987-1988	158,118	6.00	870,850.00				158,118	870,850.00
1988-1989	91,485	10.00	869,832.50	61,671	$ 5.00	$277,849.50	153,156	1,147,682.00
1989-1990	79,972	10.00	760,346.50	68,076	5.00	306,653.00	148,048	1,066,999.50

Year	Non-resident Regular Licences			Non-resident Conservation Licences			Total Non-resident Licences	
	Number	Fee	Revenue	Number	Fee	Revenue	Number	Revenue
1980-1981	32,353	$11.00	$ 348,565.25	8,658	$ 5.50	$ 45,612.50	41,011	$ 394,177.75
1981-1982	32,037	11.00	344,723.50	8,439	5.50	44,369.50	40,476	389,093.00
1982-1983	28,561	20.00	557,353.50	3,777	12.00	43,502.50	32,338	600,856.00
1983-1984	29,852	20.00	582,435.00	3,592	12.00	41,346.50	33,444	623,781.50
1984-1985	30,268	20.00	590,545.50	3,443	12.00	39,645.00	33,711	630,190.50
1985-1986	22,239	30.00	656,289.00	10,325	15.00	149,824.00	32,564	806,113.00
1986-1987	21,809	30.00	643,571.00	12,536	15.00	181,906.50	34,345	825,477.50
1987-1988	21,861	30.00	645,063.00	13,834	15.00	200,748.50	35,695	845,811.50
1988-1989	18,013	30.00	531,515.00	14,428	15.00	209,355.50	32,441	740,870.50
1989-1990	16,647	30.00	491,187.00	16,175	15.00	234,652.00	32,822	725,839.00

Year	Total Regular Licences			Total Conservation Licences			Total Licences	
	Number		Revenue	Number		Revenue	Number	Revenue
1980-1981	191,937		$ 835,949.45	8,658		$ 45,612.50	200,595	$ 881,561.95
1981-1982	191,270		831,118.40	8,439		44,369.50	199,709	875,487.90
1982-1983	192,945		1,298,441.00	3,777		43,502.50	196,722	1,341,943.50
1983-1984	187,576		1,293,421.50	3,592		41,346.50	191,168	1,334,768.00
1984-1985	184,757		1,287,087.00	3,443		39,645.00	188,200	1,326,732.00
1985-1986	176,841		1,507,765.00	10,325		149,824.00	187,166	1,657,589.00
1986-1987	180,221		1,516,139.00	12,536		181,906.50	192,757	1,698,045.50
1987-1988	179,979		1,515,913.00	13,834		200,748.50	193,813	1,716,661.50
1988-1989	109,498		1,401,347.50	76,099		487,205.00	185,597	1,888,552.50
1989-1990	96,619		1,251,533.50	84,251		541,305.00	180,870	1,792,838.50

Note: *Revenue figures are net (less vendor's commission). Non-resident 3-day licences were discontinued in 1985-1986. Non-resident conservation licences were introduced in 1985-1986. Resident conservation licences were introduced in 1988-1989.*

associations, municipal and town councils, cottage owners and seasonal campers regarding the Lac du Bonnet sport fishery. The purpose was to exchange information on approaches to fisheries management on Lac du Bonnet. On a broader scale, meetings were held with cottage owners, outfitters, lodge owners and other interest groups in Whiteshell Provincial Park to develop a fisheries management strategy specific to that park.

Private organizations and groups interested in sport fishing have worked with the branch during the past year to co-operatively manage fishery resources in various regions. These included, among others, Swan Valley Sport Fishing Enhancement Inc., Intermountain Sport Fishing Enhancement, Fish Futures Inc., Greenstone Development Corp., Concerned Anglers of Manitoba, Manitoba Wildlife Federation and associated clubs, Rocky Lake Advisory Committee, Clearwater Lake Advisory Committee, Kississing Lake Advisory Committee, Dauphin Lake Advisory Board, and the Manitoba Lodge Owners Association. Swan Valley Sport Fishing Enhancement Inc., Intermountain Sport Fishing Enhancement and Fish Futures Inc. held their annual banquets to raise funds for habitat improvement, fish stocking, children's seminars, angler surveys and fisheries research and management programs.

Table FI.8

Expenditure by Sub-appropriation 12-8(f) (Sport Fishing Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		4.00	181,500	
Main Estimate Authority from General Salary Increase XXV			3,400	
Total Salaries	161,000		184,900	(23,900)
Total Other Expenditures	52,100		40,000	12,100

Northern Fishermen's Freight Assistance

Because of the downward trend in fish prices, the Northern Fishermen's Freight Assistance Program was particularly important to northern commercial fishermen in 1989-1990. A total of $297,000 was paid to 661 commercial fishermen for the 1989 summer season. Payments to 320 fishermen for the 1989-1990 winter season amounted to $83,000.

Table FI.9

Expenditure by Sub-appropriation 12-8(g) (Northern Fishermen's Freight Assistance)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Other Expenditures	422,800		342,600	80,200

Fishermen's Loan Program

The Manitoba Agricultural Credit Corporation (M.A.C.C.) has been exploring the possibility of establishing a group life insurance program for its fishermen clients. Individual commercial fishermen and fishermen's advisory groups have also urged M.A.C.C. to establish a life insurance plan. The number and value of loans outstanding due to death has not been large. However, the collection of these debts has, at times, imposed hardship on the widows and families of deceased fishermen. In September 1989 the branch mailed a proposal for a life insurance program, together with a questionnaire, to all commercial fishermen with M.A.C.C. loans. Of the 1,125 questionnaires sent out, 360 (33%) were returned, and 99% of the respondents were in favour of the establishment of a life insurance program. M.A.C.C. is currently in the process of seeking bids from private insurance companies to provide this coverage.

Table FI.10

Expenditure by Sub-appropriation 12-8(h) (Fishermen's Loan Program – Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Other Expenditures	681,500		452,900	228,600[1]

[1] *The Fishermen's Loan Program compensates for the difference between the Department of Finance's current prime rate and the long-term (five-year) rate on all outstanding loans made by the Manitoba Agricultural Credit Corporation (M.A.C.C.) to fishermen, and other deficits in administrative costs. At present there is an inversion of long- and short-term interest rates in the market whereby the current prime rate is extraordinarily high relative to the longer-term interest rates, creating a considerably higher subsidy than anticipated.*

Section 7

Forestry Branch

The Forestry Branch ensures that Crown forest land is managed to provide an adequate resource base for existing and future harvest operations and an adequate forest cover for conservation of land resources. It manages the elm population in urban centres in the province to lessen the impact of Dutch elm disease. To prevent widespread tree mortality and timber losses it provides a level of forest protection commensurate with the values at risk. It manages and allocates forest resources for the best long-term social and economic benefits to Manitobans. It ensures that all forest harvesting operations are performed in a manner that minimises losses and environmental damage. It provides opportunities for other resource uses in designated forestry lands where the opportunities complement existing or future forest-harvesting operations. It ensures that forest resources are managed and used on a sustained-yield basis. It ensures that silvicultural and regenerative measures are developed and implemented to maintain or improve the standing supply of timber. It ensures that the Crown obtains a fair return for the use of its forestry resource.

Administration

The objectives of the Administration Section are to establish, develop and maintain a system to manage the forests of Manitoba to ensure that they are used in the most efficient and effective manner; to ensure this valuable resource is renewed and maintained for the future; and to provide grant assistance to Forintek Canada Corporation and the Manitoba Forestry Association.

Direction to the branch is provided by establishing priorities and guidelines, and by ensuring conformity with forestry and governmental policies and departmental missions.

The Administration Section assesses the effectiveness of branch activities, products and programs to meet the goals of the branch, the department and the government.

All forestry activities will conform to *The Forest Act* and *Regulations* and government policies.

Table FO.1

Expenditure by Sub-appropriation 12-7(a) (Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		2.00	210,400	
Main Estimate Authority from General Salary Increase XXV			1,900	
Total Salaries	250,100		212,300	37,800
Other Expenditures	4,700		5,000	
Grants / Transfer Payments	34,400		34,400	
Total Other Expenditures	39,100		39,400	(300)

Forest Management

The objectives of this section are to assure that the living forest resource is managed for long-term sustainable development; to promote increased use of the commercial forest zone; and to promote rational use of forest resources in rural Manitoba.

The section locates and defines the province's forest resources to calculate the amount available for sustained-yield annual harvests. It co-operates with Manitoba Industry, Trade and Tourism to increase the use of Manitoba's available forest resources by forest industries. It determines ownership/resources to provide opportunities for rural woodlot management. It identifies and assists in the development of sustainable commercial opportunities.

Aerial photography was undertaken of approximately 5,700 km² in northcentral and northwestern Manitoba in Forest Management Unit 89. However, due to smoke from forest fires, followed by cloud, only 60% of the project area was covered (Table FO.2).

Table FO.2
Forest Inventory Projects, 1989-1990

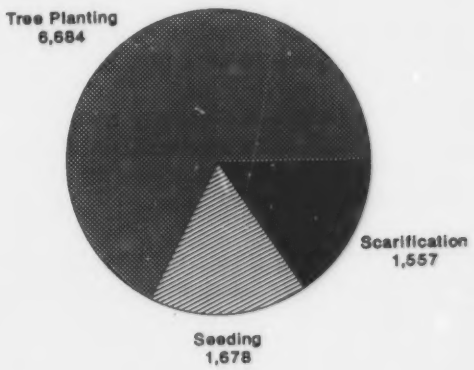
	Planned (km^2)	Actual (km^2)
Aerial Photography	5,700	3,230
Phototyping	19,400	12,870
Forest Cover Mapping	19,400	19,400
Air Photo Interpretation	19,400	17,900
Area Compilation (FORIST Library)	24,600	54,800
Forest Inventory Reports	24,600	11,160

Forest cover mapping and photo-interpretation for an area of approximately 3,400 km^2 in portions in Forest Management Units 64, 65 and 66 in the Highrock Forest Section was undertaken. All cover mapping was completed, but only 17,900 km^2 of photo-interpretation was completed due to reassignment of interpreters to forest-fire activities.

Forest resource surveys were conducted over an area of 22,150 km^2 in portions of the Highrock Forest Section through the establishment and measurement of 200 sample plots. Forest surveys were deferred until next year since all scheduled forest management units were affected by the closure of forests due to fires. Field personnel were diverted to growth-and-yield activities.

Forest inventory data was compiled and reports prepared for Forest Management Units 23, 40, 11, 12 and 83 in the Pineland, Interlake, Mountain and Nelson River sections covering an area of 24,600 km^2. In addition, 30,200 km^2 was achieved over and above expectations. Unfortunately, the new information for the Nelson River and Highrock forest sections and additional forest management units were affected by loss to forest fires. Therefore, final processing was postponed.

Figure FO.1
Reforestation Treatments, 1989-1990



Communication was maintained with Manitoba's forest industry, and the opportunities for new or expanded forest operations which arise through proposals for timber use were evaluated.

Assistance was provided to private owners to develop woodlots.

Table FO.3
Expenditure by Sub-appropriation 12-7(b) (Forest Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		22.00	775,000	
Main Estimate Authority from General Salary Increase XXV			17,200	
Total Salaries	774,800		792,200	(17,400)
Total Other Expenditures	138,700		160,900	(22,200)

Silviculture

The objectives of the Silviculture Section are to supervise and manage the provincial forest nurseries and the forest renewal program to ensure provincial standards are maintained; and to ensure that the tree improvement and forest genetics program is co-ordinated to meet the needs and guidelines of the forest renewal program.

The section provides direction and guidelines, and maintains records of timber allocation, timber use and harvesting activities involving some 12,000-15,000 permits, sales and licences each year.

The section operates the provincial forest nurseries at Hadashville and Clearwater Lake, and implements the tree improvement program.

Resources will be supplied (direction, technical information and seedling stock) to enable the branch and the forest industry to implement a forest-renewal and stand-improvement program on approximately 7,000 ha of cut-over and burned-over forested lands.

In 1989-1990 the branch carried out regenerative treatments on 9,819.3 ha of forest land. The major part of the area was planted; the remainder was seeded or scarified to promote natural regeneration (Figure FO.1). As well, 503.2 ha were tended by thinning or herbiciding (Table FO.4).

Table FO.4.

Forest Renewal Activities, 1989-1990

	Operations Section	Abitibi-Price Inc.	Repap Manitoba Ltd.	Total
Site Preparation (hectares)	2,472.5	1,118.0	2,097.0	5,687.5
Renewal				
Trees Planted (000's)				
Container Stock	2,288.44	1,427.97	4,040.5	7,756.91
Bareroot Stock	5,272.5	512.14		5,784.64
Total Trees (000's)	7,560.94	1,940.11	4,040.5	13,541.55
Hectares Planted	3,625.5	988.6	2,070.0	6,684.1
Hectares Seeded	243.5	1,240.0	94.9	1,577.9
Hectares Scarified for Natural Regeneration	825.8	Nil	731.0	1,556.8
Total Hectares Treated	4,694.8	2,228.6	2,895.9	9,819.3
Stand Tending				
Hectares Thinned	103.5	93.0	Nil	196.5
Hectares Herbicided	114.7	192.0	Nil	306.7
Hectares Treated for Weevil or Mistletoe Control	Nil	Nil	Nil	Nil
Cone Collections (hectolitres)				
Jack Pine	61.0	21.8		82.8
Red Pine	26.8			26.8
Scots Pine	1.5			1.5
Black Spruce	65.4	4.1		69.5
White Spruce	19.8			19.8
White Cedar	1.2			1.2
Total Collected	175.7	25.9		201.6

Table FO.5
Expenditure by Sub-appropriation 12-7(c) (Silviculture)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		6.00	242,500	
Main Estimate Authority from General Salary Increase XXV			4,700	
Total Salaries	248,200		247,200	1,000
Other Expenditures Main Estimate			447,200	
Main Estimate Authority from General Salary Increase XXV			2,000	
Total Other Expenditures	447,300		449,200	(1,900)

Forest Protection

The objectives of forest protection are to prevent widespread tree mortality and significant timber losses in forest stands and to prevent loss or damage to forest nursery seedlings due to insects or diseases; to maintain forest cover in good condition in high-use recreational areas; to provide information and technical assistance to the public; to ensure applications of pesticides in forests are in an effective, safe, efficient and economical manner; to develop and implement technologies through field research to improve forest protection; and to maintain elm tree losses in communities and urban centres at acceptable levels of 1% to 2% annually.

This section monitors the extent and impact of major pest problems in provincial forest nurseries and in commercial forests, and recommends controlling procedures as and when required.

The section evaluates the efficiency and effectiveness of existing and new chemical pesticides and natural biological controls used for both urban and commercial forest protection.

The section implements forest pest control programs in both commercial and urban (Dutch elm disease) situations, as indicated by the monitoring program.

The section applies new technologies and actively researches methods of reducing the impact of forest pests. It also provides program direction and public information for Dutch elm disease control and the management of forest insects and disease.

Appropriate responses are made to deal with problem insects and diseases, including sanitation activities, silvicultural management techniques and/or application of pesticides (biological, wherever possible) in high priority areas.

A forest pest control program based on the value of risk, the potential gains, the cost-effectiveness of the treatment, and environmental acceptability, is implemented.

Dutch elm disease is controlled by reducing tree mortality to 2% or less in communities and urban centres and by reducing hazardous and diseased elms by implementing cost-sharing agreements with cities and municipalities as appropriate.

Approximately 15,000 trees were marked for removal in and around urban and rural municipalities, and 10,860 trees in the City of Winnipeg. In spite of an increase in tree mortality due to Dutch elm disease, which was likely due to the stress of drought, the loss of urban elms remained below 2% in most communities.

Aerial spraying of the bacterial insecticide *Bacillus thuringiensis* (Bt) for spruce budworm was undertaken over an area of approximately 5,000 ha of high-use recreational land and high-value timber. Pest surveys were continued for a number of insects and diseases, including jack pine budworm, western gall rust, armillaria root rot and pine root collar weevil.

Table FO.6

Expenditure by Sub-appropriation 12-7(d) (Forest Protection)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		24.42	756,400	
Main Estimate Authority from General Salary Increase XXV			30,100	
Total Salaries	695,900		786,500	(90,600)
Other Expenditures Main Estimate			1,355,800	
Main Estimate Authority from General Salary Increase XXV			12,000	
Total Other Expenditures	1,967,700		1,367,800	599,900[1]

[1] *Expenditures under the provincial Dutch elm disease control program were higher due to the increased incidence of the disease resulting from successive years of drought. The provincial share of the 1989-1990 Dutch elm disease control cost-sharing with the City of Winnipeg increased by $350,000 and the control effort under the provincial program was also enhanced.*

Forest Operations

The objective of the Forest Operations Section is to ensure that the forest land base in all forest management units in an administrative region are managed and allocated in a manner which provides the best long-term social and economic benefits to Manitobans.

The section prepares the branch's current and capital spending estimates and makes adjustments thereto as required; and monitors and controls the branch's finances.

The section acquires appropriate staff and ensures training and development are provided as required.

The section develops and implements forest management plans for each forest management unit in the region. It implements and evaluates program functions and projects for timber-sale supervision and management, forest renewal and reforestation and stand improvement within the region. The section provides guidance and information on forest policies and procedures to regional resource managers and enforcement personnel.

The section continues to ensure the existence of a strong regional forest industry which employs a component of the 12,000 employees of 237 industries and 5,500 small permittees in Manitoba through the production of over 1.85 million m^3 of timber in the form of lumber, pulpwood, hydro poles, round timber, fuelwood and Christmas trees which brings in approximately $500 million in direct and indirect benefits to the Province.

The timber harvest from provincial Crown lands totalled 1,830,807 m^3 for the 1989–1990 fiscal year. Timber revenue decreased to $2,108,127.18, which represents a 19.6% decline from the previous year. New five-year sale areas were established for quota holders and those with special allocations.

The major activity through the regional planning committees evolved around the review and evaluation of the five-year operating plans for Abitibi-Price Inc. and Repap Manitoba. Five-year forest operating plans were initiated for Forest Management Units 20, 23, 30, 40, 42 and 57. For areas falling within Repap Manitoba's Forest Management Licence Agreement, preparations are being made for the transfer of forest management responsibilities.

Forest renewal activities remained at approximately the same level as previous years with the use of tendered contracts to deliver the programs.

Regional staff were involved in integrated forestry and wildlife management activities such as the moose, caribou habitat study in Abitibi-Price Inc.'s forest management licence area, and the development of a plan for great gray

owl management in a highly used nesting area in the Southeastern Region.

Forest Operations staff were also involved in developing draft objectives and policies which provide for sustainable development of Manitoba's forest reserves.

A series of meetings was held with forest industry representatives to review some of the policies under Manitoba's present quota system. Also, legislation was passed to provide for a forest-renewal charge on a cubic-metre basis on all wood harvested in Manitoba.

Forest operations staff have the responsibility to administer and process the support documentation and to ensure that the guidelines of the branch, the department and the provincial government are followed at all times in the delivery of these contracts. A total of 69 contracts and 76 rental agreements were developed by the branch in the 1989–1990 fiscal year.

The section ensures that all forestry programs are delivered within approved spending estimates. Using the Forestry Branch's existing financial project management system the 1989–1990 expenditures were within 0.5% of budget estimates.

The section prepares the branch's current and capital spending estimates within appropriate deadlines. The administration component of the Forest Operations Section provided the required capital expenditures, ongoing monitoring and supporting documentation to ensure the branch expenditures were within the target levels identified.

The section deals with all staffing activities in a manner consistent with departmental and government policies and procedures. This includes administrative support on all personnel matters for the 79 permanent, 14 term and approximately 17 permanent departmental employees within the branch. As of March 31st 1990 there were four permanent and four term positions to be filled, which amounted to a 7% vacancy rate for the branch. During the 1989-1990 fiscal year the Forestry Branch filled 10 permanent and term positions through the Civil Service competition process.

Under the direction of this section the branch maintained its support for National Forest Week and the Manitoba Forestry Association, printed and distributed educational materials, represented the branch at mall exhibits and major events, and developed two displays for use in regional malls.

During the 1989-1990 fiscal year staff from the section were actively involved in the preparation of a five-year computer task report for the branch.

Table FO.7.

Expenditure by Sub-appropriation 12-7(e) (Forest Operations)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		30.00	1,014,200	
Main Estimate Authority from General Salary Increase XXV			24,000	
Total Salaries	1,031,400		1,038,200	(6,800)
Other Expenditures Main Estimate			275,600	
Main Estimate Authority from General Salary Increase XXV			600	
Total Other Expenditures	269,200		276,200	(7,000)

Northern Development Agreement – Provincial – Forest Renewal Program

The objectives of this program are to provide bareroot and containerised seedlings for the provincial reforestation program; to improve the quality of natural stands and plantations for future production; to develop genetically superior seed and vegetative material for the provincial nursery program; and to co-ordinate and ensure the effectiveness of the provincial silvicultural program.

Activities of this program are the provincial supervision of the forest renewal program; the operation of the Pineland Forest Nursery at Hadashville and the Clearwater Forest Nursery at The Pas, which annually produces 16 million seedlings for the provincial forest renewal program; continuing work on a dynamic tree improvement and forest genetics program; and the reforestation and forest renewal of approximately 7,000 ha of cut-over and burned forest land.

Under this program, approximately 12,000 ha of planted and naturally regenerated areas will be surveyed, a portion of the 16 million seedlings produced at the provincial nurseries will be planted, sites will be prepared to plant a portion of the 16 million seedlings, improved softwood species will be developed under the tree improvement program from breeding and seed orchard development, and stand improvement on approximately 500 ha will be carried out.

At the Clearwater Forest Nursery 4.7 million container seedlings were produced for planting, and another one million frozen container seedlings were shipped to the Pineland Forest Nursery for overwintering.

Shutdowns due to fire and reallocation of staff to work on fires resulted in only half the area scheduled for regeneration being completed.

Table FO.8.
Tree Improvement Program Update to 1989-1990

Species	Breeding Zone Zone	Plus Trees Selected	Family Tests Established	Seed Orchards Established	Clone Bank
Jack Pine	Eastern	226	4 sites. 4.1 ha	6.0 ha	0.2 ha
	Western	244	1 site. 1.0 ha		
	Interlake	320		4.0 ha	
	Northern	320		4.0 ha	
Black Spruce	Southeast	450	2 sites. 10.1 ha		
	Lake Winnipeg East	450	3 sites. 9.6 ha	(9 ha prepared)	0.7 ha
	Interlake	171			
	Saskatchewan River	450	(3 sites prepared)	(11 ha cleared)	
White Spruce	Mountain	380	4 sites. 8.1 ha	(5 ha cleared)	
Total		3,011	14 sites. 32.9 ha	14.0 ha	0.9 ha

Table FO.9

Expenditure by Sub-appropriation 12-7(f) *(Northern Development Agreement* – Provincial – Forest Renewal Program)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		13.41	451,200	
Main Estimate Authority from General Salary Increase XXV			10,000	
Total Salaries	435,200		461,200	(26,000)
Other Expenditures Main Estimate			1,564,400	
Main Estimate Authority from General Salary Increase XXV			10,000	
Total Other Expenditures	1,574,100		1,574,400	(300)

Forest Development Program and *Canada-Manitoba Forest Renewal Agreement*

The objectives are to assist in the development and maintenance of timber supplies sufficient to ensure the long-term viability of the forest industry in Manitoba; to help improve the efficient use of the forest resource in Manitoba; and to contribute to the economic development of the Manitoba forestry sector, including the improvement of employment opportunities therein.

Additional funding for silviculture activities, as identified in sub-appropriations 12-7(c) (Table FO.5) and 12-7(f) (Table FO.9), was provided under the *Canada-Manitoba Forest Renewal Agreement* and the Forest Development Program. This includes cone collection, seedling production, site preparation, planting and stand tending. Similarly, forest protection programs [sub-appropriation 12-7(d) (Table FO.6)] such as aerial spraying of *Bacillus thuringiensis* and research, and forest management programs [sub-appropriation 12-7(b)] (Table FO.3) such as forest cover mapping, were further supported by funding under these two programs.

Other programs supported by the *Canada-Manitoba Forest Renewal Agreement* and the Forest Development Program include woodlot management, technology transfer and applied research, administration and public information.

In anticipation of a new five-year federal-provincial agreement, provincial funding for these programs continued at the same levels. The 1984-1989 agreement expired on March 31st 1989.

Table FO.10

Expenditure by Sub-appropriation 12-7(g) (Forest Development Program)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		11.00	345,900	
Main Estimate Authority from General Salary Increase XXV			6,800	
Total Salaries	340,200		352,700	(12,500)
Other Expenditures Main Estimate			2,040,300	
Mian Estimate Authority from General Salary Increase XXV			12,700	
Total Other Expenditures	2,036,400		2,053,000	(16,600)

Table FO.11

Expenditure by Sub-appropriation 12-7(h) (*Canada-Manitoba Forest Renewal Agreement*)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		1.0	15,300	
Main Estimate Authority from General Salary Increase XXV			200	
Main Estimate Authority from Enabling Vote XXVI			23,100	
Total Salaries	31,300		38,600	(7,300)
Other Expenditures Main Estimate			1,162,500	
Main Estimate Authority from Enabling Vote XXVI			1,743,800	
Total Other Expenditures	2,827,600		2,906,300	(78,700)

Section 8

Lands Branch

The Lands Branch manages and administers Crown lands in accordance with legislation, policies and approved land-use plans; co-ordinates clearances of land use on behalf of the Department of Northern Affairs; allocates Crown land in accordance with departmental direction; ensures that operations of Crown land lessees and permittees are consistent with conditions of use; resolves competing land claims and uses by co-ordinating work on the Resource Planning Committee, the Bloc Planning Committee, planning district meetings, major user-groups, Crown land plans, clearance for private subdivisions, gravel removal, and lake studies for recreational and other related working groups; administers the wild rice resource; investigates and negotiates outstanding Indian land claims; provides a registry system of all dispositions of Crown land; and works co-operatively with other branches, departments, outside agencies and users in planning and managing land-related programs.

Administration

The objectives of the Administration Section are to develop and manage Crown lands effectively for the overall benefit of Manitobans; to facilitate economic activity on Crown land with associated job creation while maintaining the resource base for future generations; and to ensure the necessary budget and support services for program delivery consistent with *The Crown Lands Act*.

The section identifies opportunities for the development of Crown land to optimise the return on private capital in terms of economic return and related job creation; prepares the programs according to priority and compares the final product with provincial objectives; monitors and adjusts operating budgets and capital accounts for the best end product without overexpenditure; and ensures the employment of enough competent staff to serve the public well through careful recruitment and relevant staff training and development.

Crown land is developed and marketed using primarily private capital. The development of the land base provides opportunities for construction which create a significant multiplier effect on job creation and resource-return.

Table LA.1

Expenditure by Sub-appropriation 12-6(a) (Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variances $ Over (Under)
Salaries				
Main Estimate		2.00	91,700	
Main Estimate Authority from General Salary Increase XXV			2,000	
Total Salaries	93,300		93,700	(400)
Other Expenditures	20,000		20,200	
Grants/Transfer Payments	6,000		6,000	
Total Other Expenditures	26,000		26,200	(200)

Crown Land Administration

The objectives of Crown Land Administration are to administer *The Crown Lands Act* and to allocate the land resource to fulfil program objectives and to reflect appropriate inter-departmental and inter-branch clearances consistent with legislation, regulations and policies, all within a reasonable time frame.

The section engages in very extensive public contact by means of the telephone, through personal interviews and correspondence, at public meetings and over the counter.

Following the government's decision to consolidate all appraisal functions in the Department of Government Services and to transfer wild rice extension to the Department of Northern Affairs, internal restructuring of the branch was required to absorb the non-appraisal workload from the Special Projects Section. One staff year was seconded from Northern Affairs and two others were reassigned within the branch to carry out the ongoing upgrading of recreational subdivisions and to formulate policies and procedures for development of Crown lands for recreational purposes by private developers. These policies and procedures were finalised in 1989-1990, and two lease option contracts were negotiated and approved. Negotiations on a further five contracts are ongoing. With the excellent co-operation received from the Surveys Branch, seven subdivision plans were registered during the year.

With the registration of the recreational subdivision plans, approximately 200 lots became available for sale. The response was very good, with 64 recreational sales completed in 1989-1990. There were increases in other sales as well, with 40 agricultural, 83 residential, 16 commercial and 38 miscellaneous sales completed.

The Leases and Permits Section assumed responsibility for wild rice licensing. During 1989-1990, 900 applications/assignments of leases, permits and licences were processed. A thorough review and streamlining of the circular process reduced delays in issuing contracts and enabled existing staff to assume the additional workload of the wild-rice licensing.

Responsibility for the border waters program was removed from the Lands Branch. This staff year now reports to the Deputy Minister's office and is responsible for the border waters liaison and other special projects.

Indian Land Claims

The objectives of this section are to be responsible for the overall research, planning, administration, negotiation, development and implementation of departmental policies and objectives for Indian land claims related to treaty land entitlement, flooding compensation, re-acquisitions for public purposes and band-initiated exchanges.

The section maintains an effective working relationship with colleagues in the Department of Indian Affairs, and with Indian Band Chiefs and Councils, staff of Indian interest groups including the Treaty and Aboriginal Rights Research Centre, Tribal Councils, the Northern Flood Committee and others, and with departments and agencies of the provincial government.

The section works towards the timely and orderly transfer of land to the federal government for the use and benefit of Indian Bands after identification and selection by the bands and clearance through the provincial system to ensure suitability and availability.

Table LA.2

Expenditure by Sub-appropriation 12-6(b) (Crown Lands Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		21.00	734,300	
Main Estimate Authority from General Salary Increase XXV			18,000	
Total Salaries	771,400		752,300	19,100
Total Other Expenditures	153,300		182,600	(29,300)

Regional Management

The objectives of the Regional Management Section are to co-ordinate Crown land allocations and related transactions within each region; and to ensure that local requirements of all branches and departments are fully considered prior to the allocation of any land.

The section liaises with the Departments of Municipal Affairs and Northern Affairs and with community councils and committees in the delivery of land contracts for housing, recreation, industry, etc.

In the position of chair of most bloc planning and resource planning committees the section recommends management plans and resolutions of land-use conflicts to the resource allocation working group and to the director of the branch as appropriate; and is involved in wild rice programs, subdivisions, sales and leases.

The section ensures that regional concerns of this and other departments, and of agencies, are addressed before land is allocated; and that development of recreational subdivisions and wild-rice lands is increased.

Table LA.3

Expenditure by Sub-appropriation 12-6(c) (Regional Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		7.00	318,000	
Main Estimate Authority from General Salary Increase XXV			8,000	
Total Salaries	322,600		326,000	(3,400)
Total Other Expenditures	83,000		87,800	(4,800)

Crown Lands Registry

The objectives of the Crown Lands Registry are to record Crown lands and related transactions, and to keep the Lands Branch, other departments, Crown agencies and the public informed of these records and those maintained in the Crown Land Information System on microfilm and as hard copy.

In general, the mandate of the Crown Lands Registry is to maintain a secure, complete, accurate and up-to-date record of all Crown lands and related transactions administered under *The Crown Lands Act*; to maintain a secure, complete and accurate historic record of all Crown lands and related transactions; to maintain a computer-assisted system of storage and retrieval of information related to Crown lands; to maintain an accounting of all Lands Branch transactions regarding permits, leases, land searches, sales and other related services, and to provide this information to this and other branches, departments, Crown agencies and the public as and when requested; and to train users of the Crown Land Information System in data input, maintenance and retrieval, production of reports and documents, and general use of the system.

The Crown Land Registry continued to provide a record of original dispositions of lands in Manitoba, as well as a record of all transactions related to Crown lands currently administered by the Province.

Information continued to be provided daily to law firms, the Land Titles Office, other government departments and agencies, historical societies and the public.

The section continued to explore and implement new methods of disseminating information to the users of the system, and of enhancing quality and availability of the registry's records.

The Province has no central repository for a register of all Crown lands held under all the various departmental and agency acts. The Crown Land Information System has approximately 50% of the total number of land parcels held by government and no other agency has an established automated system for recording the remaining 50%. The section will continue to build towards a complete central Crown lands registry.

Table LA.4

Expenditure by Sub-appropriation 12-6(d) (Crown Lands Registry)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		7.00	233,000	
Main Estimate Authority from General Salary Increase XXV			6,300	
Total Salaries	224,000		239,300	(15,300)
Total Other Expenditures	201,200		183,000	18,200

Section 9

Parks Branch

A system of provincial park lands has been and continues to be established, developed and maintained, and dedicated to the people of Manitoba for healthful enjoyment and for cultural, educational and social benefits that may be derived therefrom. Conservation and management of flora and fauna; preservation of specified areas and objects that are of geological, cultural, ecological or other scientific interest; and the provision of opportunities and facilities for the enjoyment of outdoor recreation are the core activities of the Parks Branch.

In 1989, the Program Services and Regional Parks Management Sections were established by realigning responsibilities from Administration and Program Management, the intent being to clarify the sections' responsibilities and to make the branch more responsive. However, the narrative below does not reflect this reorganization.

Administration

The section provides direction to the branch by establishing priorities and guidelines, and ensuring conformity to the branch's policies, departmental missions and government goals, and it assesses the effectiveness of branch activities, products and programs in this context. It monitors and controls the branch's accounts payable and receivable, secures appropriate staff and ensures their training and development as required.

The section reviewed various work programs to ensure they met the necessary goals, and that programs and facilities are developed according to current and capital spending estimates. The section developed capital and operating programs according to the 1989-1990 spending estimates and monitored the expenditures to ensure funds were expended according to *The Financial Administration Act* and departmental policies.

Representatives of this section met on a regular basis with managers of the Regional Services Branch to ensure activities in Provincial Parks were consistent with branch policies, departmental missions and government priorities.

The section secured appropriate staff to ensure the maintenance of natural and cultural resources in parks at a consistent level.

The section also provided opportunities for career development by arranging for an acting administrative officer to work in Budget Services; for a member from another branch to work as an acting administrative officer; for an administrative officer from the Wildlife Branch to work as a resource management planner with the branch; for the branch's legislative co-ordinator to work in the Wildlife Branch; and for an administrative secretary to work as an assistant in the marketing unit.

The section recruited a term accountant to be responsible for accounting park revenues; a term computer program analyst to provide assistance with the local-area network system, to develop computer programs for seasonal camping and sewage disposal systems, to collate park statistics, and to support and train parks staff; a supervisor for the Leases and Permits Section; a term clerk affirmative action candidate as an administrative assistant for the Leases and Permits Section; another term clerk affirmative action candidate for mailing and filing; a term administrative secretary for secretarial services and to assist with preparation of the *1989 Park Statistics*; a marketing and research officer for the marketing unit; and a regional parks manager, based in Dauphin, for the Western Region.

The section enabled a candidate for redeployment to transfer to the Parks Branch as co-ordinator of special programs, and transferred the regional parks manager from Dauphin to Gimli to be responsible for the Interlake/Southeastern Regions.

Table PA.1

Expenditure by Sub-appropriation 12-5(a) (Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		12.41	519,100	
Main Estimate Authority from General Salary Increase XXV			8,500	
Total Salaries	423,900		527,600	(103,700)
Total Other Expenditures	197,800		202,900	(5,100)

Park Planning

The objectives of Park Planning are to achieve the branch's mandate of maintaining a system of provincial park lands to conserve and preserve natural and cultural heritage resources, and to provide a range of outdoor recreational and educational opportunities for Manitobans and visitors to the province.

The section prepares long-range systems and management plans, and implementation programs for these plans. It reviews policies related to development and resource management. Potential park lands are identified through planning studies. A study of a new park area will be done every two years.

The Planning Section participated with the Wildlife Branch, the Canadian Parks Service and the community of Churchill in assessing the feasibility of establishing a national park at Churchill. Eleven technical reports were published and several public meetings were held during the year. A feasibility study is to be prepared next year.

A draft management plan for the Seal River was completed and distributed to the public for review and comment. Upon completion of the plan in 1989-1990, the Seal will be designated as a Canadian Heritage River.

Management plans and interim management guidelines will be prepared for parks. One management plan is to be completed every two years, with management planning involving extensive public participation. Interim management guidelines are to be completed at the rate of one or two per year.

Work commenced on a review of the intensive zones in Whiteshell Provincial Park as described in the *Whiteshell Management Plan* (1983). Background information was prepared and preliminary arrangements were made for public consultation regarding recreational development in the intensive zones.

Development of a management plan for Spruce Woods Provincial Heritage Park was continued with the production and distribution of a brochure to obtain preliminary input from the public.

A draft interim management plan was completed for Birds Hill Provincial Park.

Approved management plans will be implemented through annual work plans outlining specific tasks and through capital budget submissions.

The section completed an ethnographic study of the Tie Creek Basin in Whiteshell Provincial Park which examines the historical and current significance of the petroforms there to Native peoples.

Work on the Hecla Village Redevelopment Project progressed well. New foundations for the main buildings were contracted for. Preliminary concepts were prepared for the possible development of additional accommodation at Hecla.

Policies and procedures on the management of natural and cultural resources are being prepared on an ongoing basis and are incorporated in the department's *Policy and Procedures Manual.*

There were consultations with the Manitoba Wild Rice Farmers Association to develop new policies regarding wild rice harvesting in Provincial Parks.

The development of site plans and designs, where required to respond to public needs and in a manner sensitive to the environment, will follow from the initiatives of the management plan and the interim management guidelines.

In co-operation with the Department of Industry, Trade and Tourism, a study of the south Whiteshell was completed by a consultant. The study assessed market and land-use factors relating to priorities for redevelopment and opportunities for development in the heavily used Falcon and West Hawk Lake areas.

A site plan was completed and construction on phase I was begun for wildlife viewing trails in the Hecla marsh.

Ongoing planning and improvement of the extensive trails systems in Birds Hill Provincial Park were continued. Additional trails and improvements to signing were completed in St. Norbert Provincial Heritage Park.

A Parks/Tourism development strategy, which will be updated every two to three years to identify target areas for joint development, is being prepared.

Work continued or was begun on a variety of resource management projects, and included a study of caribou in the area of Atikaki Provincial Wilderness Park and elk in the Duck Mountains. Additional acreage was seeded to native prairie in Beaudry Provincial Park where a tall-grass prairie restoration project continued. A consultant was hired to conduct a province-wide wildlife viewing study, a co-operative project of the Departments of Natural Resources and Industry, Trade and Tourism.

The section administered various permits for resource use in parks, and participated in environmental assessments respecting the Trans-Canada Pipeline in the Whiteshell and the construction of P.T.H. 8 in Hecla. The review and comments on cutting plans by Abitibi-Price Inc. and Repap were other important activities.

On behalf of the department the section also co-ordinated preparation of data on "special areas" for inclusion in the "State of the Environment Report" proposed for 1990-1991.

A survey and report on *Resource Extraction Activities in Provincial Parks* and a paper dealing with the Parks Branch's contributions to sustainable development were completed on behalf of the Federal-Provincial Parks Council.

The section co-ordinated the production of a comprehensive handbook on sewage handling for cottagers which will be printed and distributed in 1990-1991.

A total of 75 maps showing trail systems, layouts of campgrounds and other park facilities were printed for public distribution. Of these 42 were revised maps. A map of the Falcon ski slopes and trails was also prepared.

The Planning Section was represented on the Program Review Committee of Winnipeg's Riverbank Enhancement Program. The construction of walkways, adjacent to the Red, Assiniboine and Seine Rivers, was begun or continued in 1989-1990.

Together with the Department of Industry, Trade and Tourism, the section co-ordinated a review of the current Licensing Advisory Committee. A report prepared on the *Resource-based Tourism Industry in Manitoba* outlined various options for licensing and managing the industry.

Design assistance was provided to other agencies and communities during the year. Examples of such are the Emerson and Kirkella Tourism Information Centres and the campgrounds at Steinbach and Sandy Lake.

Table PA.2

Expenditure by Sub-appropriation 12-5(b) (Park Planning)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over(Under)
Salaries				
Main Estimate		14.00	542,300	
Main Estimate Authority from General Salary Increase XXV			13,000	
Total Salaries	558,600		555,300	3,300
Total Other Expenditures	110,300		117,000	(6,700)

Program Management

The objectives of the Program Management Section are to ensure the Crown obtains a fair return for the use of its resources and that user fees are established to recover a reasonable portion of operating costs; to monitor the level of maintenance of the physical park plants and to develop and update operating procedures and standards; and to administer the vacation home lots program in Provincial Parks.

The section establishes policies, procedures and performance standards for such ongoing programs of the branch as operations, maintenance, quality control, horticulture, sewer and water, and privatization.

A manual of *Parks Branch Directives* was prepared for distribution to all Regional Services' field and head offices, and directors and senior executives of the department. The manual focuses on organizational, operational and management aspects of parks.

The section analyses the current programs, park uses, procedures and policies, legislation, risk management and trends, and recommends changes for greater effectiveness for branch and departmental approval.

Several park fees, including those for land rental and golfing, were increased with minimal public controversy. A

workshop on park fees was held and a "user-pay" task force was established to develop a model for the Parks Branch and the department to rationalise the pricing framework. The section initiated two pilot projects: one to sell annual park entry passes through vendors and to install a ticket-dispensing machine for daily park entry, and the other to accept payment of camping fees with credit cards through the development of a computerised system that will have government-wide implications.

A pilot project for risk management was tried out in three of eight park regions during the winter of 1989-1990. Various facilities were examined by peer inspection teams resulting in some immediate mitigating actions and the expansion of the program to all regions for the next fiscal year.

A tendering process was established to allow the general public to bid for the opportunity to conduct special events at Grand Beach Provincial Park.

The section reviewed the sale of Crown-supplied fuelwood and addressed concerns through legislative amendments and program revisions. It revamped the seasonal camping program by computerising the issue of camping permits which resulted in improved service by reducing the time spent at the public draws. It also installed a computerised network in the Parks Branch's Winnipeg office thus improving on the efficiency and effectiveness of handling paperwork.

The section manages the leases and permits for the vacation home lot program.

Improved communication with all cottaging associations resulted in more responsive management and program effectiveness, such as in requirements for the development of building lots, the production of publications, the variance review processes, and in better understanding of where the program is headed. The section prepared a "user-friendly" cottaging guide, reduced the turn-around time for the processing of vacation home lot assignments from five to three weeks, and increased the transfer of home lot permits to leases by 30%. The section also established a task force to develop a policy on a chief place of residence in relation to vacation home lots, and surveyed 6,000 lotholders to determine the demographics of these park users, their perceptions of the services they receive and their concerns. The section also developed a computerised invoicing system that improved the efficiency and effectiveness of both processing and public acceptance of the program.

Cottage Plan Approvals

Cottaging continued to be a popular activity in Provincial Parks but, with the aging of some early structures, more plans are being submitted for building replacement, major additions, or the use of additional buildings on site. During the year 462 plans were examined.

Work commenced on revising the "user-friendly" guide. Increased public demand for more cottage land and the related construction have created pressures to exceed the limitations now in effect. Also, there is an increasing number of owners who no longer see the family cottage as a simple structure for a temporary vacation. An increasing number of vacation homes now rival many urban residences, both in size and function.

In 1989-1990 there were 396 building permits issued and 493 assignments completed.

Water Quality Control Program

Sewage Systems

The use of private sewage systems in cottage subdivisions continued to be the major emphasis of this program. In Whiteshell Provincial Park there were 90 holding tanks, 19 septic fields, 30 sullage pits, and five other types of systems approved. There were problems detected with 99 nonconforming systems, with commitments from all these lotholders to make their systems conform. The corrective measures continue to be taken. It is expected that at least 97% of this work will be completed within the allotted time, with 100% completion by the end of the summer season. There has been good public response to the overall program, and a very high degree of co-operation in meeting the requirements of *The Environment Act*..

Under the Five-year Cyclical Inspection Program, 355 lots were inspected. This falls far short of the annual quota. The inspection of current installations and repeated site visits take up a great deal of the inspector's time and, therefore, limit the number of long-term inspections possible under the program. With the present demand to improve or install new systems more than one site inspector is required. Therefore, while the needs of the public are well served under the current inspection system, the Five-year Cyclical Inspection Program falls far short of its goals.

Sewage treatment facilities located in the parks were inventoried, monitored and inspected during the year. A number of improvements were made to lagoons at the

north end of Whiteshell Provincial Park, and an additional cell at Paint Lake is scheduled for completion in 1990. A number of liquid waste pits throughout the Provincial Parks System were improved.

Meetings were held with field staff to review procedures and criteria for the proper operation of the various treatment plants, lagoons and waste-water treatment pits throughout the province. There was close co-operation with the Department of Workplace Safety and Health in dealing with provisions of their Act and Regulations as they applied to Provincial Parks. Material relating to sewage and sullage handling and treatment was prepared for use in the "user-friendly" guide.

Water Supply and Treatment

An inventory was made of all sources of potable water in use, the types of equipment used and the treatment facilities available. A numbering system was used for positive identification of public water-supply locations. In co-operation with the local public health inspectors and Regional Services staff water-sampling procedures and frequencies were reviewed on a regional basis to ensure consistency within the program and to record test results.

The inventories confirmed the need for additional treatment facilities, and these were recorded and submitted in the Capital Parks Improvement Program for action in the 1990-1991 fiscal year. A number of water-supply facilities are in need of upgrading and these have been dealt with on an as-required basis, with a number of locations identified for improvement in 1990-1991. A record of all potable-water uses, treatment and conditions of facilities on a province-wide basis was begun. Application forms were improved and the recording of water wells on private lots was begun in order to register them and to provide basic safeguards in relation to powerlines and other structures which are owned by the cottager but may be on the public reserve or other park land.

The Provincial Parks System is operated and maintained in accordance with developed policies, procedures and standards.

The cost recovery targets established for each revenue activity area in 1989-1990 are expected to recover 60% of operating costs on implementation. For 1989-1990 total park revenue was $5,643,745.94. Total operating costs were $11,581,400 resulting in a cost recovery of 48.7%.

Table PA.3

Expenditure by Sub-appropriation 12-5(c) (Program Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		9.00	318,700	
Main Estimate Authority from General Salary Increase XXV			8,200	
Total Salaries	353,400		326,900	26,500
Total Other Expenditures	40,800		39,900	900

Park Operations and Maintenance

The objectives of Park Operations and Maintenance are to operate and maintain the Provincial Parks of Manitoba; and to provide high-quality safe and enjoyable outdoor recreational and educational opportunities for the people of Manitoba and visitors to the province.

The section maintains and operates the infrastructure for 147 Provincial Parks in a fashion that will provide opportunities for safe and enjoyable recreational and/or educational activities. It also ensures that the general public complies with the various provincial Acts and Regulations.

Capital Programs

The Parks Branch's capital program continues to be the major vehicle for the upgrading of existing facilities, including buildings and structures, roads, marinas, beaches, trails, and equipment used to maintain the system. The cost of maintaining the existing facilities represents approximately 80% of the available funds.

Major expenditures within the program have included lagoon construction at Paint Lake and reconstruction of lagoons in Whiteshell Provincial Park. There was some replacement of equipment at various park locations, with the emphasis on medium-duty wheel tractors, and the replacement of heavy-duty truck chassis in a number of park districts. Emergency projects accounted for re-allocation of funds within the program. The number of situations where a major expenditure of funds is required to continue satisfactory operation of the system and to meet public expectations is increasing.

Maintenance Management

The gathering of field data continued at St. Malo, Grand Beach, Lac du Bonnet / Bissett. This information was added to the data previously gathered from the pilot project at Birds Hill Provincial Park. All information on the park infrastructure assembled to date has been organized and entered in a computerised system. A number of items previously included were removed from the program as they were not required and tended to encumber the process with minute details. However, if these details are required in the future, they could be obtained on a site-specific basis.

Solid Waste Disposal

Solid waste disposal within the Provincial Parks System requires a major upgrading of disposal sites, site operations and public acceptance of site requirements.

All sites being used in the Provincial Parks System have been entered in a central registry to record location, use factor and classification under the terms of *The Environment Act*. Operational procedures, as covered in the licensing of these facilities, have been reviewed with field staff. A number of locations have either been closed or reorganized to improve site control and operations to meet the provisions of *The Environment Act*. More stringent controls are to be enacted, and all solid-waste sites which continue to be licensed will be subject to new rules and regulations accordingly. The use and operation of these sites are major concerns in the parks program and must be addressed as soon as possible.

Table PA.4

Expenditure by Sub-appropriation 12-5(d) (Park Operations and Maintenance)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		331.49	8,760,600	
Main Estimate Authority from General Salary Increase XXV			150,000	
Total Salaries	8,830,700		8,910,600	(79,900)
Total Other Expenditures	2,805,100		2,820,800	(15,700)

Visitor Services

The objective of the Visitor Services Section is to match high-quality park experiences with the needs and wants of present and future park visitors.

The section provides marketing information to guide park planning and operation. The branch's *Three-Year Marketing Plan* was completed. The plan is a systematic approach to the marketing of parks with the emphasis on market research to better understand the public's complex needs and match them with the provision of experiences and opportunities in Provincial Parks.

Market Research

Cottagers in Provincial Parks were surveyed to determine their needs, perceptions and attitudes about a number of park-related programs and services. The results indicate a need for better lines of communication, and provided valuable information on how cottagers use parks.

Tne University of Manitoba was contracted to conduct a survey to determine what factors are most important to campers before they decide on a particular campground. The survey also dealt with campers' willingness to pay for services and any service trade-offs they were willing to make. Results indicate that campsite price was the most important factor in making a decision to visit a campground. Other important factors included the availability of showers, serviced campsites and beaches, and the opportunities for fishing.

Analysis of the *1988 Park Visitor Survey* was completed. The survey dealt with users' satisfaction with park facilities, services and staff. A very high percentage (77.5%) rated their visit to a park as very enjoyable, compared to only 1.6% who rated it as not enjoyable. The results also indicate that improvements have been made in regard to park maintenance and cleanliness, nature and hiking trails, stores, concession stands and commercial accommodation.

Rural and urban focus group studies were conducted with existing park users, infrequent users and non-users. Small groups representing various user groups and age categories were asked detailed questions about experiences they seek in a park, their image of parks, and their attitudes towards various park programs. Results show that parks are considered to be places to get away from it all, to recreate with the family and socialise with friends, and to get close to nature. These findings helped the branch to better define park products, to provide themes for promotional strategies and, generally, to provide a better understanding of park users and non-users for more responsive park planning and management.

The gathering of information for a use-trend report was begun. This report will include park attendance and campground use over the last ten years, as well as a record of the use of various recreational and interpretative facilities in parks. This information will be used as a basis for promotional activities, to plan facilities and to assist in the budgeting process.

Interpretation

The 1989 interpretative field program was delivered in seven Provincial Parks by seven seasonal and three staff employed under the Student Temporary Employment Program (S.T.E.P.). A total of 57,971 park visitors were contacted. This represents an 8% decrease from 1988.

The field program consists of two components: school programming, which is conducted during the last part of May and in June; and public programming made up of amphitheatre shows, guided walks and special events, which begins in the middle of June and continues until the Labour Day weekend.

To assist park interpreters, resource libraries (field guides) were purchased for each District Office .

With the development and approval of an *Interpretative Strategy*, programs and products in the Provincial Parks System have been identified on a priority basis until 1996. Among the completed products are the *Birds Hill Provincial Park Guide* and the *Nimowin Self-guiding Trail* (also located in Birds Hill Provincial Park) brochure and teacher's guide. The last two items received awards from the National Association of Interpreters (American).

Heritage Properties

The program to revitalise Hecla Village in Hecla Provincial Heritage Park commenced this year. The purpose of the restoration is to preserve Icelandic cultural history, including landscape, buildings and artifacts; to increase the number of visits to the park; and to provide employment opportunities in the region. The project is part of the cost-sharing *Canada-Manitoba Tourism Agreement* and is funded by the Departments of Natural Resources and Industry, Trade and Tourism, and private sources. As of March 31st 1990, three existing buildings had been placed on new foundations.

Promotion

Work continued towards increasing awareness among Manitobans of the diversity of recreational opportunities in parks and towards providing the public with timely information on park facilities and operations.

Promotional activities included the branch's participation in the Discover Manitoba Discount Program, a co-operative program of Travel Manitoba and Blackwoods Beverages to promote travel within Manitoba. A display was staffed at the Manitoba Vacation Mart in conjunction with the Tourism Industry Association of Manitoba. United Express Airlines sponsored a parks promotional program on a radio talk show in Denver. Winter recreation maps were again distributed in Winnipeg through retail sporting goods stores. Travel Manitoba, the Parks Branch and Tourism Canada co-operated on a broadcast promoting Grass River Provincial Park on Cable News Network throughout North America.

Dial-a-site camping and family vacation cabins were promoted through leaflets and newspaper advertisements.

Commercial Services

The section continued to promote the provision of high-quality commercial services by the private sector, and the economic benefits of Provincial Parks to local communities.

There are 154 commercial concessions administered by the Parks Branch in Manitoba's Provincial Parks. Examples include lodges, food concessions, golf courses, marinas, restaurants, fuelwood concessions, riding stables, beach concessions and campground operations. There were 15 lease renewals for the 1989-1990 year.

The divestiture of Springhill Winter Park to a private operator through a proposal-call process was completed. This transaction included the sale of equipment and assets on site (excluding land). Use of the facility increased dramatically in 1989-1990.

By means of a public proposal process an agreement was negotiated with a private operator to provide commercial services in Grand Beach Provincial Park.

Co-operative Activities

The section continued to provide opportunities for Manitobans to contribute through co-operative activities to the park experience enjoyed by visitors.

The Volunteer Campground Host Program had eight parks with ten hosts volunteering a total of 3,200 hours and making 8,860 personal contacts with park visitors. This represents twice the number of people contacted in 1987-1988. The program uses long-term campers to welcome new campers and introduce them to the facilities available.

There are three co-operating associations in parks. The Friends of Spruce Woods Inc.'s current projects include the operation of a gift shop and an equestrian campground, and the sponsorship of the special annual event, *Pine Fort Days*. Friends of the Whiteshell Inc. has completed a permanent residence for Bucky the Beaver. Beaver World, complete with a gift shop, is located at the Alf Hole Goose Sanctuary. Tours of the Whiteshell Fish Hatchery were resumed with approximately 1,000 people participating. The Descendants and Friends of Hecla Island Heritage Inc. is still in the formative stages. This association has identified such future projects as the *Homecoming '90* reunion, supplying the Hecla Village Museum with artifacts, and conducting fish demonstrations and fish fries.

These three existing co-operating associations were established prior to the 1989-1990 fiscal year. In 1989, the department once again provided the associations with grants to help them in their early stages.

Expected Results

Since the *1989 Park Statistics* were unavailable at the time of printing, changes in park use cannot be provided. However, it is likely that park use has declined over 1988 due to closure of parts of the backcountry and of parks on account of the forest fires in the summer of 1989.

The next Parks Visitor Survey will be conducted in 1991. Results of that survey will indicate if the quality of service and facilities are improving. Trends since 1986 show an improvement in the overall enjoyment of parks. The commencement of a complaint evaluation program in 1990 will also allow the Parks Branch to better track trends in complaints.

Promotional activities will continue to be undertaken, e.g. special events, complimentary media coverage, advertising, trade shows, publications,etc., and it is expected that the number of businesses providing visitor services to Manitobans and out-of-province visitors will increase.

Table PA.5

Expenditure by Sub-appropriation 12-5(e) (Visitor Services)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		10.00	388,100	
Main Estimate Authority from General Salary Increase XXV			8,300	
Total Salaries	381,100		396,400	(15,300)
Total Other Expenditures	86,600		76,900	9,700

Grant Assistance

The objectives of this program are to provide financial assistance to the International Peace Gardens and the Fort Whyte Centre for Environmental Education to support their objectives.

In 1989-1990 there were two grants awarded to the International Peace Gardens: an annual operating grant of $63,700 and a one-time grant of $61,300 for upgrading the garden's infrastructure.

The Fort Whyte Centre will be supported in its efforts to become a financially viable organization, operating at arm's length of the Province. A grant of $5,000 was provided to assist in its operations and maintenance.

Grants were provided to three groups to assist in the promotion of the natural and cultural attractions of local parks, to develop high-quality park-related materials, to operate a sales outlet and to accept donations to enhance the interpretative and recreational experiences of park visitors. Friends of the Whiteshell Inc. received $15,000, The Friends of Spruce Woods Inc. $10,000, and The Descendants and Friends of Hecla Island Heritage Inc. $15,000.

Table PA.6

Expenditure by Sub-appropriation 12-5(f) (Grant Assistance)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Other Expenditures				
Grants / Transfer Payments	170,000		68,700	
Total Other Expenditures	170,000		68,700	101,300[1]

[1] *Grants totalling $40,000 were provided to co-operating associations at three provincial parks, and $61,300 for an additional grant to the International Peace Gardens was provided to assist with ongoing operation and maintenance of the park.*

Regional Park Management

The objectives of the Regional Park Management Section are to plan, manage and evaluate the regional component of the Provincial Parks System and to assist other agencies and groups by serving as an outdoor recreational specialist.

The section participates in planning, setting priorities, allocating and evaluating the annual budget and work schedule of the Parks Branch, and administers park policies and procedures. The section is the liaison between inter- and intra-governmental agencies, industry and special interest groups. It manages the interpretative/educational programs of the branch.

The section identifies the needs, issues and priorities respecting the preservation/conservation and economic development of natural and cultural resources, and prepares plans for the development of outdoor recreational areas and facilities.

Expected results of the Regional Park Management Section's activities would include the following.

- *Organizational efficiencies in developing and administering the branch's annual budget through an improved understanding of regional needs and priorities, and better communication;
- *improved response to inquiries from the public, the private sector and government agencies to reduce complaints and promote awareness and appreciation of the parks system;
- *the development of co-operative ventures such as volunteer programs and corporate sponsorships;
- *better integration of the branch's interests with programs and activities of other agencies resulting in greater efficiency and early resolution of potential land-use conflicts; and
- *a better understanding of local park users' needs that will be reflected in plans and facilities provided in response to local needs and wants.

Through the five regional park managers and two assistants, the Parks Branch was better represented at the regional level. Response to the public was expedited and park interests were better integrated with other programs and activities.

The Beach Safety Program was reviewed and revised with a full plan for restructuring receiving senior executive approval. Tendering of the Grand Beach special events was co-ordinated. Review of Repap's forestry management plans was carried out. The managers resolved local problems of vacation home lotholders.

Table PA.7

Expenditure by Sub-appropriation 12-5(g) (Regional Park Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		8.26	318,900	
Main Estimate Authority from General Salary Increase XXV			12,700	
Total Salaries	343,600		331,600	12,000
Total Other Expenditures	68,400		70,000	(1,600)

Section 10

Regional Services Branch

The mission of the Regional Services Branch is to provide field services in support of departmental programs and legislation to ensure the sustainable development of provincial natural resources.

The branch enforces resource Acts and Regulations; provides field services to support the development and delivery of resource management programs to the public and other government agencies; operates and maintains Provincial Parks; manages forest-fire prevention, detection, pre-suppression and suppression programs; co-ordinates hunter-safety training; responds to complaints of problem wildlife; and co-ordinates the department's legislative program.

Branch programs and activities are implemented by staff in eight regions which are in turn subdivided into districts, each with its own office. Regional and district operations are supported by headquarters staff.

A record number of forest fires in 1989 stretched the department's resources to the limit and had a significant impact on other departmental programs delivered by the branch.

Administration (Headquarters)

The Headquarters Section is responsible for the following.

Program Direction and Co-ordination to ensure the cost-effective use of available resources. This is accomplished on an ongoing basis through the development of operational guidelines, the establishment of organizational standards and controls, and by monitoring and evaluating effectiveness of individual and program performance. As a result of the disastrous 1989 fire season, several reviews of the province's forest fire program were conducted and numerous changes were prepared for the 1990 fire season.

Financial and Administrative Support Services. The development and maintenance of appropriate financial controls and reporting and monitoring systems are significant ongoing activities.

Staff Training and Development. Specialised training is provided to enhance staff safety and effectiveness. Among the courses held in 1989-1990 were Advanced Tactical Driver Training, Firearm Safety, Fire Investigations, Park Foreman Seminar, Essentials of Supervision, Emergency First Aid, C.P.R., Boat Safety, Animal Control, Communicating with the Native Public, Computer Training, Natural Resource Officer Trainee Orientation and Testing, Park Patrol and Beach Safety Officer Training, Dangerous Goods / Emergency Response, and Scaling.

Enforcement and Court Services. The provision of advice to field staff on the interpretation and enforcement of resource legislation and the maintenance of court records are major ongoing activities. Interpretations related to the *Charter of Rights* and Treaty Indian rights continued to demand attention. Tables RS.1 to RS.3 show the most common violations under *The Provincial Park Lands Act, The Wildlife Act, The Fisheries Act* (Canada), *The Fisheries Act* (Manitoba) and *The Freshwater Fish Marketing Act*. Table RS.4 is a 10-year summary of

Table RS.1

Most Common Violations under *The Provincial Park Lands Act*, 1989-1990

Offence	Prosecutions	Convictions	% Convicted	Warnings	Total Offences
Caused Disturbance	67	59	88	1	68
Parked Illegally	17	16	94	12	29
Unauthorised Fire	8	8	100	6	14
Operate Vehicle in Non-designated Area	6	6	100	6	12
Pets on the Loose	5	5	100	24	29
Operated Noisy/Dangerous Vehicle	6	4	67	6	12
Damaged/Defaced Park/Public Property	11	9	82	12	23
Other	104	89	86	250	354
Total	224	196	88	317	541

Note: *Total Fines: $14,095. Average Fine: $71.91. Total Costs: $4,517.*

Table RS.2

Most Common Violations under *The Wildlife Act*, 1989-1990

Offence	Prosecutions	Convictions	% Convicted	Warnings	Total Offences
Loaded Firearm	214	187	87	8	222
Nightlighting	127	98	77	0	127
Hunting on Private Land Without Permission	89	69	77	30	119
Possess Illegally Taken Animal	29	19	66	8	37
Hunting Without Licence	26	22	85	17	43
Hunting Out of Season	27	22	81	9	36
Other	137	115	84	213	350
Total	649	532	82	285	934

Note: *Total Fines: $110,695. Average Fine: $170.56. Total Costs: $32,589.90.*

Table RS.3

Most Common Violations under *The Fisheries Act* (Canada), *The Freshwater Fish Marketing Act* and *The Fisheries Act* (Manitoba), 1989-1990

Offence	Prosecutions	Convictions	% Convicted	Warnings	Total Offences
Sport Fishing					
Sport Fish Without a Licence	147	136	93	170	317
Angle With Too Many Lines	47	45	96	9	56
Exceed Limit	66	66	100	72	138
Fail to Carry/Produce Licence	54	46	85	313	367
Transport Unidentifiable Fish	1	1	100	8	9
Fail to Use Barbless Hooks	287	283	99	88	375
Fish Within 25 Yards of Fishway	28	26	93	4	32
Commercial Fishing					
Small Mesh Nets	5	4	80	12	17
Commercial Fishing Without a Licence	4	4	100	4	8
Fail to Mark Equipment	8	7	88	11	19
Decayed Fish	8	8	100	4	12
General Domestic Fishing					
Fish/Possess Fish Contrary to Act or Regulations	13	8	62	0	13
Fish During Closed Season	27	25	93	0	27
Fish/Possess Fish Without Lawful Reason	18	4	22	2	20
Other	162	142	88	51	213
Total	875	805	92	748	1,623

Note: *Total Fines: $57,001.48. Average Fine: $70.42. Total Costs: $2,877.*

prosecutions related to wildlife, fisheries, parks and migratory birds. Table RS.5 is a summary of all prosecutions and warnings for violations of legislation enforced by the Branch.

Legislative Services are provided to co-ordinate the development and review of all departmental legislation and regulations to ensure conformity with legal and legislative requirements, enforcement and processing to established deadlines.

In 1989-1990, the branch reviewed and developed legislation for this and other departments in consultation with the Department of Justice. This included final Bills and enactment of Acts to amend *The Wildlife Act, The Water Rights Act, The Ground Water and Well Water Act, The Ecological Reserves Act, The Endangered Species Act* and *The Forest Act*. Also reviewed and developed were amendments to *The City of Winnipeg Act, The Boating Restriction Regulations* under *The Canada Shipping Act* and *The Manitoba Fishery Regulations* under *The Fisheries Act* (Canada). Assistance was also provided to the Government of Canada in the development of *The Plant and Animal Import and Export Act* and amendments to *The Navigable Waters Protection Act.*

Regulations were developed and enacted under *The Wildlife Act, The Forest Act, The Ground Water and Well Water Act, The Water Rights Act, The Water Resources Administration Act, The Water Power Act, The Crown Lands Act, The Provincial Park Lands Act, The Ecological Reserves Act* and *The Environment Act*. Assistance was continued to the Office of Legislative Counsel—Regulations, Manitoba Department of Justice, to re-enact all legislation administered by the Department into the dual English-French format.

Hunter and Firearm Safety Training. This program provides training to prospective hunters and is aimed at minimising accidental shootings. In 1989-1990, 309 volunteer hunter safety instructors trained 2,479 students. Since the beginning of the program in 1964 a total of 108,997 persons have been trained (Table RS.24). Annual firearm accidents since the program was established are shown in Table RS. 7.

Table RS.8 provides statistics on firearm accidents and fatalities over the last 10 years.

Hunter-killed Livestock Compensation. This program compensates farmers for the loss of livestock accidentally shot by hunters. The objective is to encourage farmers not to post their land as "No Hunting." Eleven claims were made, of which seven qualified for compensation for a total of $8,554. Table RS.9 is a list of claims over the last 10 years.

Guide Licensing. A total of 803 guide licences were issued in 1989-1990 compared to the previous year's total of 865.

Problem Wildlife. In conjunction with the Wildlife Branch, the Headquarters Section assists in the co-ordination of funding and procedures related to problem wildlife complaints (Table RS.10).

Enforcement in Provincial Parks. The low-tolerance enforcement strategy implemented in Provincial Parks in 1988 was improved in 1989, resulting in reduced liquor abuse, vandalism and rowdyism. The foci of the program were high-use sites such as Grand Beach, Birds Hill and Whiteshell.

Illegal Harvest of Fish and Wildlife. The illegal harvesting of game and fish in a number of areas continued to be a focus of enforcement. Efforts included more effective patrolling by natural resource officers, increased use of special officers, improved co-ordination with other agencies, continued use of the Turn-in-Poachers (TIP) program, use of high-tech enforcement equipment, and training of specialised officers (Tables 11 and 12).

Table RS.4

Comparison of Wildlife, Fisheries, Parks, and Migratory Birds Prosecutions, 1980-1981 to 1989-1990

Fiscal Year	Wildlife	Fisheries	Parks	Migratory Birds
1980–1981	438[1]	446[2]		
1981–1982	897	597[2]	179	69
1982–1983	557	475[3]	108	22
1983–1984	604	555[3]	157	30
1984–1985	561	475[3]	121	41
1985–1986	686	452[3]	226	83
1986–1987	557	494[3]	270	58
1987–1988	594	524[3]	234	41
1988–1989	491	746[3]	304	43
1989–1990	649	875[3]	224	54

[1] *Includes violations under* The Wildlife Act *and* The Migratory Birds Convention Act.

[2] *Sportfish violations only are shown for 1981-1982 and earlier.*

[3] *Includes* The Fisheries Act *(Canada) and* The Fisheries Act *(Manitoba).*

Table RS.6

Hunter and Firearm Safety Program, 1980-1989

Year	Students	Total to Date	Instructors Certified
1980	3,905	78,147	51
1981	4,614	83,788	63
1982	4,460	87,248	45
1983	3,315	90,563	58
1984	4,150	94,713	47
1985	2,977	97,690	38
1986	2,922	100,612	28
1987	2,953	103,565	30
1988	2,953	106,518	26
1989	2,479	108,997	37

Table RS.7

Firearm Accidents, 1964-1989

1964–1968	average 44
1969–1973	average 56
1974–1978	average 54
1979–1983	average 43
1984–1988	average 26
1989	27

Table RS.5

Recorded Violations, 1989-1990

	Prosecutions	Convictions	% Convicted	Warnings	Total Offences
Fisheries	875	805	92	748	1,623
Liquor Control	661	631	95	27	688
Wildlife	649	532	82	285	934
Provincial Parks	224	196	87	317	541
Highway Traffic	157	137	87	79	236
Migratory Birds	54	35	65	27	81
Off Road Vehicles	33	28	85	34	67
Fires Prevention	32	29	91	39	71
Criminal Code	29	9	31	0	29
Environment	23	20	87	6	29
Forest	9	8	88	23	32
Small Vessels	2	2	100	0	2
Wild Rice Act	1	1	100	0	1
Crown Lands	1	1	100	7	8
Tourism & Recreation Act	1	1	100		1
Petty Trespass				1	1
Total	2,751	2,435	89	1,593	4,344

Note: *Fines: $240,832.21. Warnings: 1,593. Evictions: 339. Costs: $56,815.45. Prosecutions: 2,436. Trespass(Forestry): 7.*

Table RS.8

Firearm Accidents, 1980-1989

	Accidents			Fatalities		
	Hunting	Non-Hunting	Total	Hunting	Non-Hunting	Total
1980	9	13	22	1	2	3
1981	24	10	34	2	2	4
1982	13	7	20	0	1	1
1983	8	12	20	2	3	5
1984	13	3	16	2	0	2
1985	12	14	26	1	0	1
1986	15	17	32	4	0	4
1987	16	9	25	2	1	3
1988	14	12	26	2	2	4
1989	18	9	27	3	0	3

Note: *Treaty Indian firearm accidents were not included in accident totals prior to 1985.*

Table RS.9

Livestock Compensation Program, 1980-1981 to 1989-1990

Year Paid	Claims	Claims Paid	Total Paid	Average
1980–1981	8	3	$ 2,289.50	$ 763.17
1981–1982	21	11	6,300.00	572.73
1982–1983	23	12	13,500.00	1,125.00
1983–1984	26	10	10,518.00	1,051.80
1984–1985	8	5	2,499.04	499.80
1985–1986	6	1	1,820.00	1,820.00
1986–1987	10	8	5,879.47	723.93
1987–1988	15	10	8,720.00	872.00
1988–1989	7	4	4,625.00	1,156.25
1989–1990	11	7	8,553.60	1,221.94

Table RS.10
Problem Wildlife Occurrences, 1989-1990

Species	Region									
	NE	NW	SE	SW	E	Int	W	Wh	Species Total	% of Total
Beaver 100%[1]	7	14	87	51	37	33	8	37	274	11
Beaver 50–50[2]	0	2	0	70	2	4	8	4	90	3
Black Bear	75	23	21	41	95	57	42	66	420	16
Polar Bear	111	0	0	0	0	0	0	0	111	4
Elk } Moose } Deer }	1	1	42	140	11	23	162	0	380	15
Wolf	9	9	32	9	9	21	9	1	99	4
Migratory Birds	5	39	13	92	8	224	72	3	456	18
Other	6	16	306	158	65	111	44	32	738	29
Total	214	104	501	561	227	473	345	143	2,568	100

[1] *Beaver 100% refers to areas where costs are supported 100% by the Province.*

[2] *Beaver 50–50 refers to areas around Riding Mountain National Park where costs are shared 50-50 with the federal government.*

Table RS.11
T.I.P. Calls by Region, 1989-1990

Region	Number of Calls				Number of Charges			
	Fish	Wildlife	Other	Total	Fish	Wildlife	Other	Total
Southeastern	10	164	1	175	0	18	0	18
Southwestern	5	118	0	123	0	25	1	26
Interlake	26	87	2	115	6	2	0	8
Western	5	61	2	68	4	10	1	15
Eastern	20	64	0	84	10	8	0	18
Whiteshell	6	13	1	20	13	2	0	15
Northwestern	2	3	0	5	0	0	0	0
Northeastern	4	10	0	14	0	0	0	0
Total	78	520	6	604	33	65	2	100

Table RS.12
T.I.P. Calls by Year, 1985-1986 to 1989-1990

	1985–1986	1986–1987	1987–1988	1988–1989	1989–1990	Total
Calls Received	417	530	706	615	604	2,872
Information Calls	217	123	356	98	72	866
Offences Dealt With	200	407	313	363	242	1,525
Prosecutions	66	138	124	80	102	510
Warnings	22	29	34	9	35	129

Table RS.13

Expenditure by Sub-appropriation 12-2(a) (Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		23.13	890,500	
Main Estimate Authority from General Salary Increase XXV			24,200	
Total Salaries	945,800		914,700	31,100
Other Expenditures Main Estimate			921,400	
Main Estimate Authority from General Salary Increase XXV			700	
Total Other Expenditures	969,700		922,100	47,600[1]

[1] *The department implemented an intercept feeding program and undertook fence repairs due to increased damage by elk to stored crops and fences in the Swan River valley and Spruce Woods areas.*

Regional Operations

The programs and activities of the Regional Services Branch are delivered by staff in eight regions. Their major programs and activities are

- enforcing legislation to safeguard resources,
- providing progams of wildfire prevention, detection, pre-suppression and suppression to protect resources from forest fires,
- operating and maintaining Provincial Parks to ensure appropriate levels of public service, safety and security,
- maintaining effective community relations with particular emphasis on native, sportsperson and park-user groups,
- responding to concerns about problem wildlife to minimise complaints and alleviate adverse effects, and
- assisting other branches in the delivery of their field programs.

The highlights of 1989–1990 for each region follow.

Northwestern Region

Regional administrative staff commenced processing invoices and accounts for the Wildlife and Fisheries Branches. All administrative staff were overloaded with account processing and recording due to the extreme forest-fire situation.

Enforcement efforts were somewhat curtailed during the fire season. No major problems were encountered in the enforcement of the various Acts and Regulations.

The year 1989 was a record-setting one for fire occurrences, fire losses and expenditures. Major fires were dealt with at Moose Lake, Sherridon and Snow Lake. Campgrounds in the Cranberry Portage and Snow Lake areas were closed for several weeks in the summer due to forest fires.

Low water-levels made many of the boat-launching areas in the region unusable. Launching areas were extended and improved to provide at least one usable access point on each major water-body.

Meetings were held with communities and organizations after the province-wide hearings on the 1989 forest fires. Improvements to the provincial fire program in 1990 were examined at these meetings.

Bear hunting by non-residents registered at lodges and with outfitters eased the bear-people conflict in some areas.

The bait station, together with two lure crops and scaring devices, was very effective in minimising waterfowl depredation of cereal crops in The Pas area.

Table RS.14

Expenditure by Sub-appropriation 12-2(b) (Northwestern Region)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		31.48	1,085,500	
Main Estimate Authority from General Salary Increase XXV			28,100	
Total Salaries	1,067,300		1,113,600	(46,300)
Total Other Expenditures	364,800		360,000	4,800

Northeastern Region

Regional administrative staff commenced processing invoices and accounts for the Wildlife and Fisheries Branches. All administrative staff were overloaded with account processing and recording related to the extreme forest-fire situation.

Enforcement efforts were somewhat curtailed during the fire season. No major problems were encountered in the enforcement of the various Acts and Regulations.

The year 1989 was a record-setting one for fire occurrences, fire losses and expenditures.

Meetings were held with communities and organizations after the province-wide hearings on the 1989 forest fires. Improvements to the provincial fire program in 1990 were examined at these meetings.

Bear hunting by non-residents registered at lodges and with outfitters eased the bear-people conflict in some areas.

The Polar Bear Alert Program was once again successful in the Churchill area. There were 111 occurrences, with November being the busiest time with 69 occurrences and 27 bears captured. Forty-seven bears were captured under the program, a marked increase from the average 30 bears per year. There was considerable public input into the program and a survey indicated that residents of Churchill were very satisfied with it. One female cub was shipped to the Winnipeg Zoo. The other captured bears were released on the ice or flown to the north of Churchill for release.

Table RS.15

Expenditure by Sub-appropriation 12-2(c) (Northeastern Region)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		37.48	1,268,200	
Main Estimate Authority from General Salary Increase XXV			36,500	
Total Salaries	1,236,600		1,304,700	(68,100)
Total Other Expenditures	696,200		700,300	(4,100)

Interlake Region

In the Interlake Region, 4,094 big game hunters were checked and 156 charges laid for a compliance rate of 96%.

There were 7,218 sport fishermen checked and 248 charges laid for a compliance rate of 96.5%. The Red River accounted for 90% of the anglers and charges in the Interlake Region.

There were 180 commercial fishermen checked with 51 charges laid. Also, 1,884 nets were checked for mesh size, decaying fish and proper markings, and 260 nets were seized.

There were 1,802 waterfowl hunters checked with 17 charges laid for a compliance rate of 99%.

There were 15 timber sales operated in the region, and there were no charges laid.

A total of 11 charges were laid under *The Provincial Park Lands Act*.

The Interlake Region had 141 forest fires, 127 caused by humans and 14 by lightning. A total of 767,849 ha were burned for an average of 5,445 ha per fire. The 1989 forest fires burned approximately 80% of the merchantable timber in the Interlake as well as 20 houses, parts of 34 farmyards and many kilometres of fencing. Damage was in the millions of dollars.

The most heavily used park areas were River Road, Winnipeg Beach and Hecla Island. Over 23,000 people visited Kennedy House on River Road.

Incidents of rowdyism were few in the Interlake with 11 charges being laid under *The Provincial Park Lands Act*. There were 11,571 camper-nights spent at Provincial Parks in 1989, which is a drop of 23% from 1988.

Staff maintained community relations with all user groups, including native organizations, by attending and holding meetings with local councils, game and fish organizations and Indian Bands, and by attending fairs, Pow Wow Days and social functions such as the municipal curling bonspiel.

Complaints about problem wildlife in the Interlake Region were as follows.

Beaver	37
Big Game	23
Coyote – Fox	111
Migratory Birds	224
Wolf	21

The high number of complaints results from the Interlake being a staging area for waterfowl and from the increase in all furbearer populations due to a decrease in harvest because of poor prices.

Table RS.16

Expenditure by Sub-appropriation 12-2(d) (Interlake Region)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		43.04	1,376,000	
Main Estimate Authority from General Salary Increase XXV			47,400	
Total Salaries	1,691,200		1,423,400	267,800[1]
Total Other Expenditures	520,100		499,600	20,500

[1] *Expenditures related to workers compensation payments were higher than anticipated.*

Southwestern Region

A new Manitou district office is being constructed and should be ready by the fall of 1990.

The Turtle Mountain district office was moved from Turtle Mountain Provincial Park to the Land Titles building in Boissevain.

Nightlighting continued to be a major problem. Considerable efforts were made to control it, resulting in 41 charges being laid.

In spite of low water-levels, sports angling continued to be high. The use of barbed hooks on restricted waters was the most common offence.

Enforcement in Provincial Parks was directed at preventing rowdyism.

There were six forest fires dealt with in the region. One in the Neepawa District on the east side of Riding Mountain was a potential problem fire. The Turtle Mountain District assisted the R.M. of Morton to fight a fire in the community pasture. Many staff were sent to other regions to help with fire suppression. A shed was constructed in the Brandon District compound to house fire equipment.

As a result of the extended drought, the water table at Stephenfield Reservoir dropped to the point where the existing wells could not supply sufficient water to maintain the park. This was rectified by installing a second water system using lake water for the washrooms.

Several heritage buildings were restored in the backcountry of Spruce Woods Provincial Heritage Park.

To upgrade rolling stock, a new three-ton truck was purchased for the Turtle Mountain district. Three used three-ton trucks were also purchased from the Department of Highways for use at Spruce Woods, Turtle Mountain and Stephenfield, respectively.

Complaints continued to be received from residents in the Rivers area regarding water quality and the dock.

The Friends of Spruce Woods Inc. entered into an agreement with the department to operate two equestrian campgrounds. This co-operating association also ran the Spirit Sands Bookshop in the Visitor Services Building. It was also actively involved in the *Pine Fort Days* celebrations in early August.

An influx of moose hunters in Turtle Mountain Provincial Park caused concern for the safety of park users. To allay fears, meetings were held with the Manitoba Wildlife Federation, the Trappers Association, and the Natives on the reserve. The result was a regulation prohibiting the discharge of firearms from main roads in the park.

The Southwestern Region, Neepawa and Shoal Lake Districts delivered the 50-50 cost-shared federal-provincial beaver control program on the south side of Riding Mountain. The agreement expired on March 31st 1990. Negotiations are under way for renewal of the agreement. Under the program a total of 276 beaver and 178 beaver dams were removed at a cost of $27.2.

There were 561 incidents concerning problem wildlife.

An experimental project for elk damage control was conducted in the Carberry District. Various types of fencing material were used to prevent animal access to stored forage and standing crops. The project, which cost $8.0, had varying degrees of success.

Table RS.17

Expenditure by Sub-appropriation 12-2(e) (Southwestern Region)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		26.11	868,400	
Main Estimate Authority from General Salary Increase XXV			34,800	
Total Salaries	877,600		903,200	(25,600)
Total Other Expenditures	291,900		291,100	800

Western Region

District Offices at Winnipegosis, Mafeking and Grandview were refurbished, and computers were acquired for Mafeking and Winnipegosis.

The Regional Office began providing administrative services to all branches in the region.

In 1989-1990 special enforcement plans were initiated for the Lake Winnipegosis summer commercial fishery and the Lake of the Woods sport fishery. Two new patrol boats were acquired for Lake Winnipegosis.

Enforcement figures for 1989-1990 are 365 charges, 181 warnings, six evictions (Parks), five trespasses (Forestry), and 41 nightlighting charges.

District occurrence reports totalled 1,058, of which 345 were related to problem wildlife, 489 were regulatory and 224 were non-regulatory.

The above-normal temperatures in April combined with below-normal winter precipitation caused the most active forest-fire season in the region in the past ten years. Strong drying conditions existed well beyond "green up." Of a total of 102 fires during the year, 80 occurred in April and May. The 102 fires burned 58,248 ha of forested land and 17,216 ha of non-forested land, with the largest fire being the Cowan fire which burned 63,652 ha (80% forested land). Of the 102 fires, well over 90% were human-caused as only six could be attributed to lightning. The issuing of burning permits was begun with the various Indian Reserves in the region and met with some success.

Regular operating duties in Provincial Parks were strained due to the fire problems. Travel restrictions during the Cowan fire and secondment to fire duties had an impact on all operations. Capital work orders were for the most part delayed until late in the season after the fires in the north. Only minor complaints were received from the general public as most people were aware of and appreciated the situation.

Regional staff were very active in promoting good community relations since they were on the Elk Management Board and the Swan-Pelican Advisory Board. Staff also attended all scheduled game and fish, parkland, wildlife, Riding Mountain liaison, 50-50 beaver program, Parks Association, and commercial fisheries and forestry meetings. Various R.M., L.G.D., Northern Affairs and Indian Reserve meetings were held to discuss problem wildlife, fire management, resource law enforcement, and parks operations. All districts had staff participate in community events and several N.R.O.'s were involved with the Law Enforcement Charity Run.

Negotiations were begun with Riding Mountain National Park regarding the 50-50 federal-provincial beaver program that was to expire at the end of the fiscal year. Several meetings were held with landowners and other interested groups regarding elk depredation in the Swan River valley, and a detailed plan of action and long-term strategy were developed. Due to the continuing drought there were fewer complaints about beavers.

Through regional planning committee meetings and ongoing day-to-day work staff assisted all branches with their field programs, such as wildlife surveys, reforestation, fisheries enhancement, and park-users' liaison. Regional Services staff also assisted in the program to capture and relocate elk in the Swan River valley.

Table RS.18

Expenditure by Sub-appropriation 12-2(f) (Western Region)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		38.00	1,268,800	
Main Estimate Authority from General Salary Increase XXV			42,800	
Total Salaries	1,213,300		1,311,600	(98,300)
Total Other Expenditures	416,300		419,000	(2,700)

Southeastern Region

The number of hunters licensed for the archery and muzzle deer seasons increased sharply from last year, while the general deer firearm season saw hunting pressure decrease slightly. The landowner season in Game Hunting Area 33 was not well received, since few landowners purchased licences.

Staff from Portage la Prairie district issued 100 commercial fishing licences, conducted 13 patrols and checked 192 nets on the southernmost portion of Lake Manitoba to ensure compliance with the varying net sizes between the regular and experimental perch fishery.

Staff checked 4,676 hunters during the year. The bear season was relatively quiet, with hunter activity increasing during the wild turkey season. In most districts hunting pressure was low in the waterfowl season even in the Delta Marsh area. Hunting pressure during the upland game bird season was moderate to light, and there were few hunters during the sandhill crane season with population increases evident.

Under *The Fisheries Act* and *Regulations* four charges were laid pertaining to commercial fishing, and 63 charges and 63 warnings pertaining to sport fishing. There were two charges and three warnings under *The Fires Prevention Act*; 21 charges and 50 warnings and 46 evictions for park violations; 78 charges and one warning for liquor control violations; nine charges and four warnings under *The Highway Traffic Act*; six charges and four warnings for infractions of *The Migratory Birds Act*; 173 charges and 59 warnings under *The Wildlife Act* and *Regulations*; five charges and one warning pertaining to *The Off-Road Vehicle Act*; two charges and four warnings under *The Forest Act* and *Regulations*; one charge under *The Clean Environment Act* and *Regulations*; two charges for *Criminal Code* offences and one charge under *The Tourism and Recreation Act*. Also, 450 enforcement-related occurrences were dealt with during the fiscal year.

Fire protection was a high priority in the region. During the fiscal year, 25 fires required departmental action. A total of 215 burning permits were issued.

The region was responsible for the operation of seven park areas, the largest being St. Malo Provincial Recreation Park. Staffing to required levels, assuring compliance with park regulations, and maintenance and revenue collection for these areas were carried out by the region. There were no major problems encountered other than vandalism of buildings and equipment, particularly in those parks close to the city. The zero-tolerance program was instituted at St. Malo, with a consequent reduction in rowdyism.

The sewage system of St. Malo Provincial Recreation Park was hooked on to the town system.

Staff dealt with 501 complaints about problem wildlife, with 306 of these about such animals as raccoons, squirrels and small birds in the city. As a result of landowners' complaints about 87 beavers were dealt with.

A total of 232 deer were killed on roads, 97 within city limits.

Trapping activity was reduced due to low prices. This resulted in a sharp increase in the number of complaints about beavers, coyotes and wolves that were dealt with by staff.

To ensure compliance with acceptable harvesting practices, staff supervised and collected revenue on 86 timber sales and 922 permits.

Fireguard #5 was re-opened this year after the river crossing was completed by installing two ten-foot culverts.

The objective of the Turn-in-Poachers (T.I.P.) program is to improve enforcement through the public's co-operation in reporting violations. In 1989-1990 the T.I.P. program received 604 calls which resulted in 102 charges and 35 warnings (Tables RS.11 and RS.12).

Table RS.19

Expenditure by Sub-appropriation 12-2(g) (Southeastern Region)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		32.28	1,052,200	
Main Estimate Authority from General Salary Increase XXV			42,300	
Total Salaries	1,074,000		1,094,500	(20,500)
Total Other Expenditures	326,100		326,700	(600)

Eastern Region

In the Eastern Region 2,859 sport fishermen were checked and 97 charges laid for a compliance rate of 97%. At Lockport, 1,680 anglers were checked and 43 charges laid for a compliance rate of 97%. A total of 1,870 hunters were checked with 38 charges laid for a compliance rate of 98%. Conviction rates of 89% and 70%, respectively, were achieved for angling and hunting prosecutions.

Several programs aimed at reducing illegal trafficking in fish and wildlife were carried out on the Winnipeg River and in Game Hunting Areas 26 and 17.

A total of 236 fisheries and wildlife enforcement complaints were dealt with, compared to 227 in 1988.

There was a total of 1,152 regulatory and non-regulatory occurrences dealt with in the region. A total of 59 charges were laid under *The Provincial Park Lands Act*, and 160 under *The Liquor Control Act*. A total of 140 groups were evicted from Provincial Parks in the region.

The region had 137 forest fires of which 67 (49%) were human-caused. This compares to 91 (26%) human-caused fires in 1988.

The fire-detection program detected 73 of the 137 fires. The average size of the fires on detection was 0.8 ha. The average size of the fires was 656.6 ha, with Red Zone fires averaging 92.8 ha. This compares to 540.0 ha and 827.0 ha respectively in 1988.

Grand Beach and Birds Hill, the most heavily used Provincial Parks in the region, provided 39,975 camping days.

Grand Beach Provincial Park and Birds Hill Provincial Park hosted a total of 40 special events of which the *16th Annual Folk Festival* at Birds Hill was the biggest, attracting 37,537 visitors, a slight increase from the previous year.

The anti-rowdyism campaign was continued with good progress and special focus on Grand Beach and Birds Hill Provincial Parks. The number of staff was increased at Grand Beach during all long weekends. Reported infractions of park regulations were down to 174 from 199 in the previous year. A similar decrease was also noted in the number and severity of incidents of rowdyism.

Staff maintained community relations with all user groups, including Native organizations, by attending and holding meetings with local councils, Indian groups and cottage owners' associations, and by participating in many community social functions. The region's major focus was on fire prevention where 1,024 personal contacts were made by the fire prevention officer. The region co-ordinated and participated in several joint resource management programs with Native communities involving fire prevention and domestic fishing.

There was a total of 227 reported occurrences concerning problem wildlife, as listed in Table Rs.20.

Table RS.20
Problem Wildlife Occurrences, Eastern Region

Beaver	39*
Big Game	11
Black Bear	95
Migratory Birds	8
Other (Coyote, Fox and Rodents)	65
Wolf	9

**Complaints about beavers increased from 17 the previous year.*

Table RS.21
Expenditure by Sub-appropriation 12-2(h) (Eastern Region)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		33.29	1,089,300	
Main Estimate Authority from General Salary Increase XXV			35,700	
Total Salaries	1,079,500		1,125,000	(45,500)
Total Other Expenditures	332,500		337,900	(5,400)

Whiteshell Region

The region monitored Manitoba Hydro's construction of the new transmission line from Seven Sisters Falls to Star Lake.

The historic Dawson Cabin was restored and moved to the Manitoba Forestry Association's site near Hadashville.

Staff supervised the construction of the trans-Canada pipeline through the Falcon Lake / West Hawk Lake Corridor.

Biathlon National Championships were held at Falcon Lake with great success. The Falcon Lake Ski Club finalised the installation of a T-bar at the ski hill.

Fire-training courses were held for cottage owners.

The wild rice season was a failure with water levels causing very low production. There was one warning and one charge relating to use of a mechanical picker in a hand-picking area.

The Falcon Lake ambulance responded to 216 calls.

Bannock Point Rehabilitation crews worked 5,782 man-days at various projects throughout the region.

Trapping activity in the region was very low due to poor prices.

There were 4,433 anglers checked, resulting in 86 charges and 107 warnings. Twenty-four charges and five warnings resulted from 3,281 hunters being checked.

Under *The Provincial Park Lands Act* there were 92 charges and 173 warnings (down from 151 and 239, respectively, in 1988-1989). In addition, there were 198 charges and nine warnings related to liquor, and 32 charges and 17 warnings under *The Highway Traffic Act*. The use of zero tolerance on traditional problem weekends significantly reduced complaints of rowdyism. A subsequent increase in family use of parks has been noted.

A total of 34 fires were fought in the region.

The region is responsible for the staffing, revenue collection and successful operation and maintenance of all park areas in the Whiteshell, in addition to the townsites of Falcon Lake and West Hawk Lake, and the Falcon Lake Golf Course and ski hill. Winter-use activities continued with increased high snowmobile traffic, increased ski hill usage and increased winter fishing. The Mantario Rally at Rennie and Beaver Days at Falcon were well attended.

The number of deer and moose killed on roads increased. The number of encounters with bears increased. Depredation by beavers increased sharply as low prices meant a smaller harvest and more landowners' complaints.

The boat cache program was continued in backcountry lakes.

Table RS.22

Expenditure by Sub-appropriation 12-2(j) (Whiteshell Region)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		23.13	747,500	
Main Estimate Authority from General Salary Increase XXV			27,700	
Total Salaries	738,400		775,200	(36,800)
Total Other Expenditures	264,900		265,600	(700)

Northern Development Agreement – Fire Program

In 1989, Manitoba experienced the worst fire season on record with 1,147 forest fires consuming 3.2 million ha and costing more than $63 million to suppress. The fires forced the evacuation of 24,500 people from 32 communities at an additional cost of $17 million.

The fire season consisted of two major outbreaks. The first occurred in the southern portion of the province during early May as a result of human-caused fires and burned over 600,000 ha of mixed agricultural/forested land. The second outbreak occurred in mid July throughout northern Manitoba as a result of lightning activity which began a series of fires that eventually led to a state of emergency being declared on July 23rd 1989.

In both outbreaks the weather played the main role in determining the extent and severity of the fires. Record high temperatures coupled with extremely low ground moisture levels caused by the 1988 and 1989 droughts, produced fire conditions which were unprecedented in the province's history. These severe conditions were aggravated by strong winds which caused fires to crown and spread to catastrophic proportions over the span of a few days. The total area which burned in 1989 was approximately equal to the combined areas of Lakes Winnipeg, Manitoba and Winnipegosis.

In the aftermath of the fires, the Province conducted public and expert reviews of the provincial fire program to determine which specific areas could be adjusted to improve overall effectiveness. These reviews produced a series of recommendations for change, many of which were initiated during the 1989-1990 fiscal year, or are projected for implementation in 1990-1991.

Administration and Headquarters

The fire program maintained its regular functions and duties despite the burden the 1989 fires placed upon its human and financial resources. At the outset of the season, firetac and helitac crews were trained at the district level with additional emergency firefighters (E.F.F.) hired as needed. By the end of the year the fire program had developed a certified firefighter training program which would train and certify all firefighters to a provincial standard. The certification requirement was in place for all hiring for the 1990 fire season.

As in previous years, new equipment and techniques were tested and evaluated for their potential use in the fire program. A sprinkler system was used at the cottage subdivision at Wanipigow and is credited for saving the cottages from the fire which surrounded them.

The use of firefighting foam was extended to include its use by CL-215 waterbombers and helicopter bucketing. Positive results ensure continued development and use in subsequent years. Extensive helitorching and backburning techniques were used in 1989 to fight the major fires which were beyond the control of traditional suppression methods. The fire program also became involved with the use of structural fire-fighting equipment to assist the many communities whose buildings and homes were threatened by the approaching flames.

The communication network was maintained and enhanced through the regular updating and technological changes associated with such networks. One major enhancement which occurred as a direct result of the review process was the upgrading of existing communication equipment to interface with systems used by local, municipal, fire and police departments in rural Manitoba. Upgrading of all existing equipment will be completed for the 1990-1991 fiscal year.

Extensive intergovernmental liaison occurred as a result of the 1989 fire year with men and equipment being imported from neighbouring provinces and states. The Canadian Interagency Forest Fire Centre (C.I.F.F.C.) was called upon to assist in locating resources and manpower as the fires increased.

The provincial fire headquarters staff served the vital functions of planning and co-ordinating efforts, providing up-to-date weather and lightning information to regional staff, and monitoring problem areas. In addition, they disseminated information pertaining to current fire conditions to the media and to executive decision makers in government. Such information was a key factor in making the vital strategic and planning decisions associated with the 1989 fires.

Table RS.23

Expenditure by Sub-appropriation 12-2(k) (*Northern Development Agreement* – Provincial – Fire Program Development and Evaluation)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		7.04	283,600	
Main Estimate Authority from General Salary Increase XXV			8,300	
Total Salaries	255,800		291,900	(36,100)
Other Expenditures	227,100		344,500	
Grants / Transfer Payments	15,100		15,100	
Total Other Expenditures	242,200		359,600	(117,400)

Fire Detection Program

The existing lightning detection system was enhanced with the location of three new remote terminal monitors at Thompson, Beausejour and The Pas. These terminals provide the fire control officers in these regions with accurate lightning locator information simultaneously with its detection at fire headquarters in Winnipeg. This enables a faster initial detection and response to lightning-caused fires.

An additional half staff-year was provided for a weather/communications specialist to fulfil the role of maintaining, repairing and deploying the lightning detection system.

The vast amount of smoke created by the fires of 1989 made visual detection of new fires and large fire boundaries very difficult. The objective of 0.5 ha was not attained. New, high-level infrared scanning equipment was brought in from the U.S. Forest Service in an attempt to overcome this problem. Some success was attained in the detection of large fire boundaries, but the location of smaller new starts was unsuccessful.

Table RS.24

Expenditure by Sub-appropriation 12-2(m) (*Northern Development Agreement* – Provincial – Fire Detection Program)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		2.00	41,000	
Main Estimate Authority from General Salary Increase XXV			400	
Total Salaries	39,300		41,400	(2,100)
Total Other Expenditures	240,200		288,100	(47,900)

Fire Prevention Program

Seasonal fire prevention patrolmen delivered existing programs to forest operators, farmers, recreationalists and the general public to educate them on the need for forest-fire prevention.

The traditional Smokey-the-Bear school program was delivered by natural resources officers to school children from kindergarten to grade 6. Promotional material such as rulers, balloons, posters and colouring books were distributed.

A total of 520 human-caused fires occurred in 1989. This increase of 150 over 1988 is attributed to the extreme drought conditions that made ordinary burning practices very dangerous.

Due to the severity of the 1989 fires, prevention patrolmen were reassigned fireline duties and were only able to conduct a minimal level of prevention activities.

The prevention program was identified by the review process as a vehicle which could be used to a greater extent to educate the public of the need to prevent human-caused fires. Towards this end, the fire program will include new initiatives on increased contact at the grass-roots level in the agricultural and urban interface areas. Literature and communication support are planned, e.g. brochures and a recently produced video package entitled *Beware and Prepare*. Further targeting of specific fire-risk audiences is planned for 1990-1991.

Table RS. 25

Expenditure by Sub-appropriation 12-2(n) (*Northern Development Agreement* – Provincial – Fire Prevention Program)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		0.30	23,900	
Main Estimate Authority from General Salary Increase XXV			300	
Total Salaries	22,500		24,200	(1,700)
Total Other Expenditures	65,100		66,900	(1,800)

Fire Pre-suppression Program

In 1989, 140 seasonal fire rangers were employed to support initial attack and detection activities. Regular maintenance of fire towers and ranger cabins was carried out, as well as ensuring that all fire equipment was adequately repaired and stored.

Thirteen remote weather-monitoring stations were serviced and maintained by the weather/communications specialist. The existing weather information system was enhanced by the establishment of four new weather information sites: at Hodgson, Birds Hill, Kettle Hills and Hart Mountain. These sites provide the data necessary to calculate the fire weather indices for the surrounding area. The establishment of additional sites is planned for 1990-1991.

A system to receive satellite weather imagery was installed at provincial headquarters.

Contracted for the 1989 season were five CL-215 waterbombers, three medium-lift helicopters, four light-lift helicopters, two Otters and one Cessna 210. All CL-215 waterbombers had been converted for use with fire foam by the end of 1989-1990.

In spite of the two disastrous outbreaks of fire in 1989, the success of the pre-suppression program was evident with the very high number of successful initial attacks which prevented additional forest and property losses. These successes tend to be overlooked because of the magnitude of forest losses in 1989.

Plans for 1990 include reorganization of the provincial operations room, experimentation with a portable look-out tower, addition of another mobile warehouse, and a major training initiative.

Table RS.26

Expenditure by Sub-appropriation 12-2(p) (*Northern Development Agreement* – Provincial – Fire Pre-suppression Program)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		40.25	1,309,200	
Main Estimate Authority from General Salary Increase XXV			18,000	
Total Salaries	1,279,800		1,327,200	(47,400)
Total Other Expenses	2,138,700		2,243,600	(104,900)

Extra Suppression

Record expenditures on fire suppression were established during the 1989 fire season. At the peak of fire activity in the last week of July a total of 68 helicopters were operating in the province, supported by a total of 13 waterbombers including eight from other jurisdictions across Canada. A total of 30,859.4 hours were flown in 1989 at a cost of $24,981,750. Of this, 2,750.1 hours were logged by the CL-215's, 4,972.5 hours by general fixed-wing aircraft, and 23,136.8 hours by helicopters.

An additional 2,500 emergency firefighters were employed throughout the province in 1989. These people came from all over Manitoba, and also included a number of specialists from other provinces.

Ground support for fire operations included food for kitchens and base camps, fuel, oil and maintenance for aircraft operations, as well as transportation for equipment and firefighters. Cost of rental, purchase and repair of equipment associated with fire operations were extensive in 1989 in order to supply the required vehicles, tools, fire pumps, fire retardant and hose to suppress the fires.

Because of the catastrophic nature of the 1989 fire season the objective of the suppression program changed from saving forests to saving lives and property. Heavy forest losses occurred in the Eastern, Interlake and Northern Regions in the spring and summer outbreaks.

Table RS.27

Expenditure by Sub-appropriation 12-2(r) (*Northern Development Agreement* – Provincial – Fire Extra-suppression Fund)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Other Expenditures Main Estimate			10,000,000	
Supplementary Estimate			49,000,000	
Total Other Expenditures	56,663,000		59,000,000	(2,337,000)[1]

[1] *When estimating the total cost of forest fire suppression during the extreme fire occurrence in 1989-1990, the department over-estimated the costs projected for services provided by other provinces, equipment replacement, aviation fuel restocking, repair and overhaul of the water bombers, support costs for firefighters and the suppression of peat fires in the winter.*

Firetac Program

When the 1989 fire season began, 120 firetac members were organized into approximately 25 four-man crews. These crews were deployed at traditional firetac bases throughout the province. However, at the height of the fire outbreak crews had been moved, as needed, throughout the province and were accompanied by additional emergency fire-fighter crews. Much of the activity concentrated on the protection of communities and homesteads threatened by the fires, as well as on providing initial attacks on fire starts threatening timber resources.

Table RS. 28

Expenditure by Sub-appropriation 12-2(s) (*Northern Development Agreement* – Provincial – Firetac Program

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Other Expenditures Main Estimate			1,013,400	
Main Estimate Authority from General Salary Increase XXV			3,700	
Total Other Expenditures	991,600		1,017,100	(25,500)

Helitac Program

The helitac program consisted of 50 helitac members based at Bissett, Snow Lake and Paint Lake. These members, organized into crews, provided rapid initial attack on new fire starts using helicopters for transportation. The helitac unit at Paint Lake carried out 80 successful initial attacks before the number and severity of the fires and speed at which they spread made continuing successes impossible. The high number of multiple starts simply outnumbered the helitac crews available at the time. The crews did however continue work on project fires to save communities. The review process indicated a strengthening of helitac crews and helicopters was a need for the 1990-1991 season.

Table RS.29

Expenditure by Sub-appropriation 12-2(t) (*Northern Development Agreement* – Provincial – Helitac Program)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Other Expenditures Main Estimate			1,224,100	
Main Estimate Authority from General Salary Increase XXV			6,200	
Total Other Expenditures	1,293,000		1,230,300	62,700

Figure RS.1
Number of Fires, 1980-1989

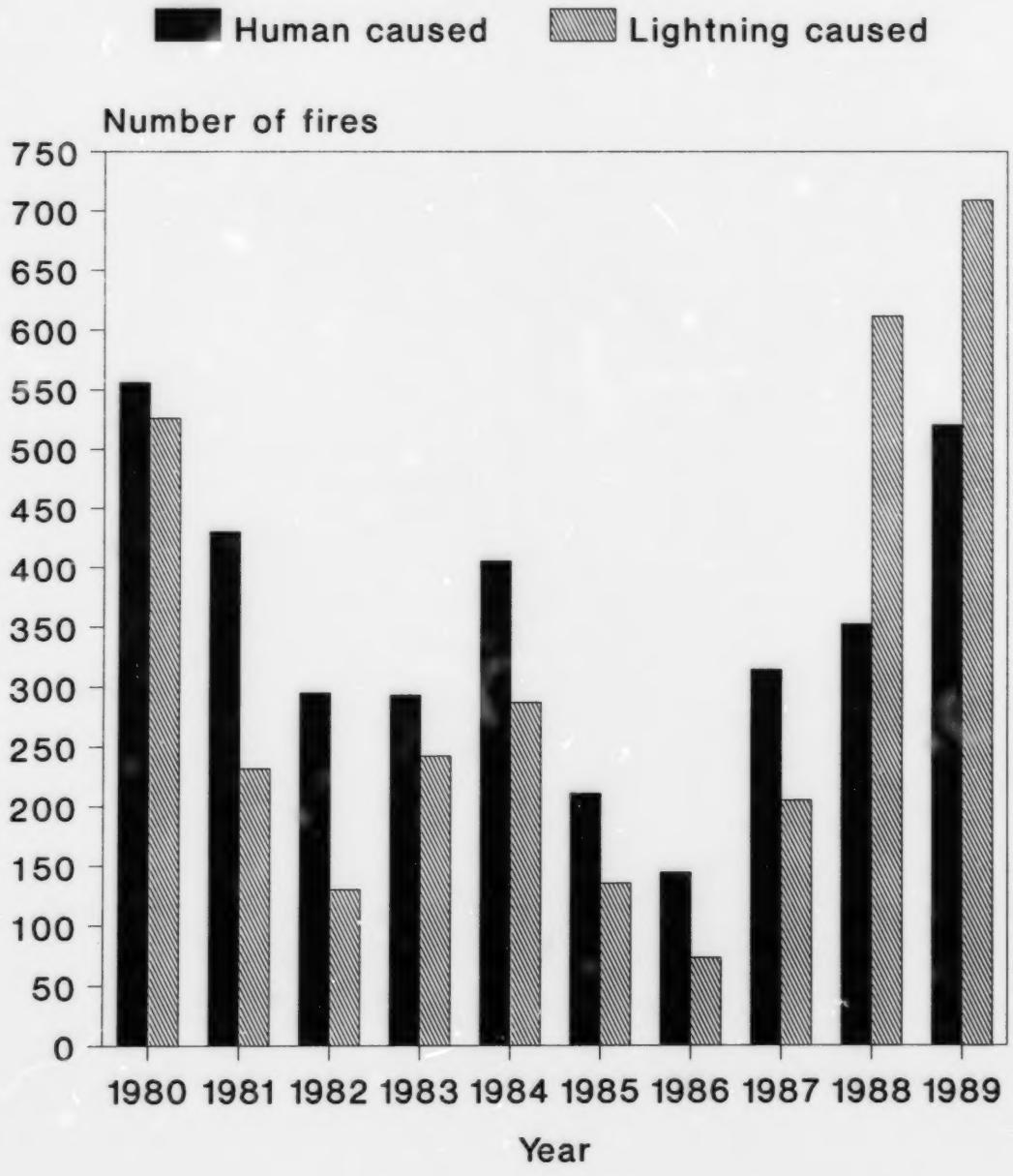
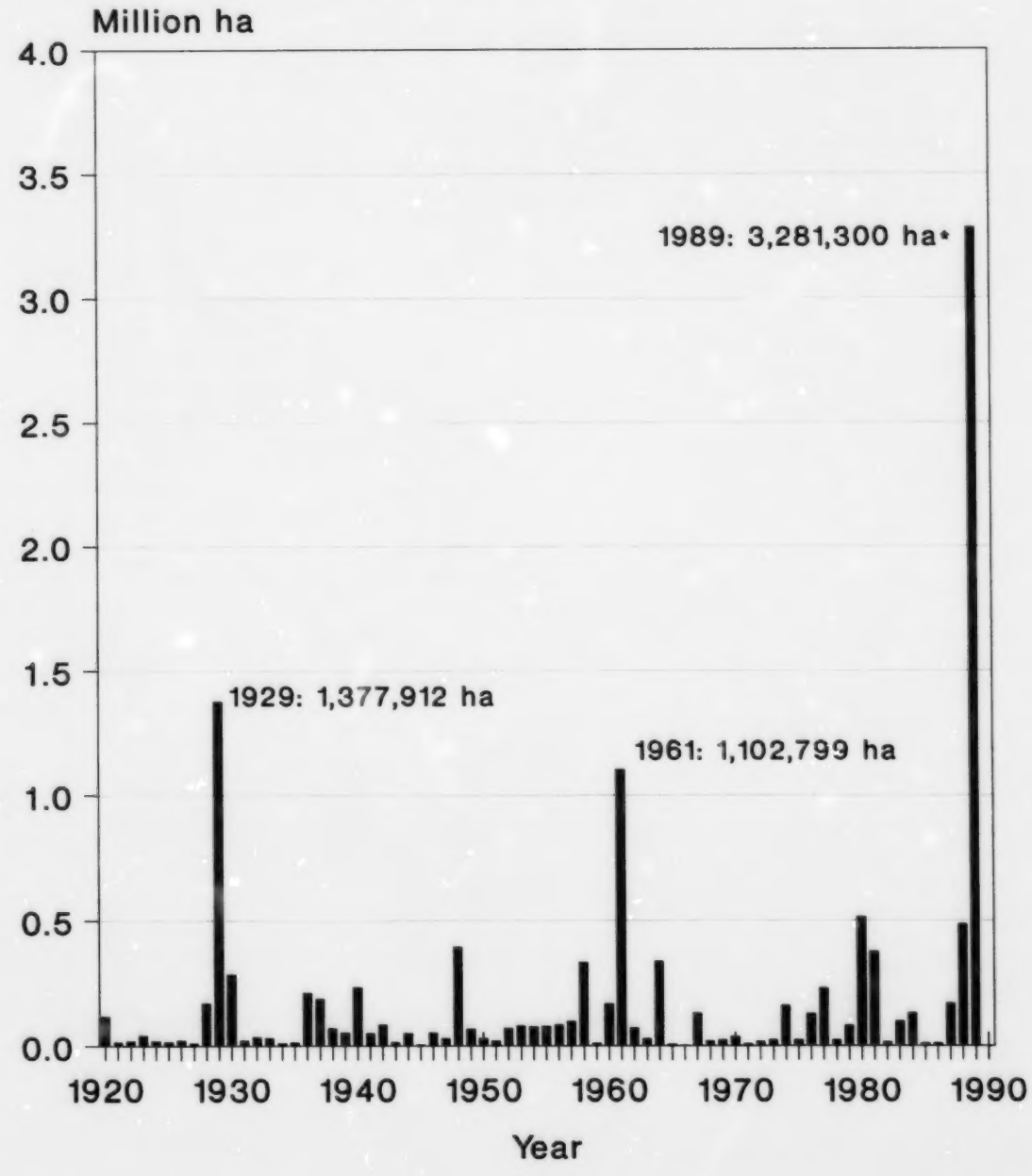


Figure RS.2
Total Area Burned, 1920-1989



*1989 data based on preliminary mapping

Section 11

Surveys and Mapping Branch

The mission of the Surveys and Mapping Branch is to provide provincial surveying and mapping systems that support the efficient management of Manitoba's land mass to achieve the department's mission and roles.

The branch provides positional and descriptive information about the Manitoba land mass through a broad range of services which support programs of both the public and private sectors. These services include land descriptions, geographical names management, legal and geodetic surveys, topographical and geographical mapping, map distribution and remote sensing, and computations and data management.

Land Description Services

This program provides land descriptions for Crown Land transactions such as plans of subdivisions, land or mineral exchanges and the agricultural Crown land sales program. It provides for permits and leases under *The Crown Lands Act* and *The Mines Act*. It also provides consents and orders of the minister under *The Municipal Act* and *The Municipal Board Act*.

The activity of providing land description services for Crown land transactions, mineral exchanges, consents and orders of the minister is a constant and ongoing service with the major accomplishments not being quantifiable.

The prediction of approximately 500 requests for service are close to the projected mark, with only the emphasis shifting in different categories.

The mines and minerals exchanges and conveyances are up due to the increase in subdivision registrations and, in turn, the closely related minister's orders under *The Municipal Act* have greatly increased in number.

The result of this program has been 100% response with every request being satisfactorily dealt with.

Manitoba Geographical Names Program

This program provides for the development of policy, the establishment of toponymic control in government documents, the research for and approval of both proposed and established names, and the provision of a commemorative name certificates program.

Table SM.1

Land Description Services

Requests for Services	533
Legal Descriptions	343
Area Calculations	102
Right-of-Ways Agreements	57
Survey Requirements	17
Ducks Unlimited	9
Mines and Minerals Reports	41
Consents and Orders	59

Canadian Permanent Committee on Geographical Names

The annual meetings of the Canadian Permanent Committee on Geographical Names (C.P.C.G.N.), held in Winnipeg from September 13th to 16th, were a tremendous success.

The Advisory Committee on Toponymy Research (A.C.T.R.) addressed a full agenda dealing with such matters as a Canada-USA understanding on trans-boundary feature-naming, federal-provincial co-operation in field research, a round table discussion on Native names—directed particularly at the question of approving geographical names in Native languages, and the development of standardised "alternative" names. Input to the discussion on Native names came from invited guests who included native representatives, linguists, a cartographer and a journalist.

The minister participated in the opening of the plenary session of the C.P.C.G.N. on Friday, September 15th. He welcomed the largest-ever gathering of members and invited guests to the 28th annual meeting. He discussed the important role that place names have played and continue to play in the development of our province.

The meeting chaired by Hugh O'Donnell, Assistant Deputy Minister of the federal Department of Energy, Mines and Resources, addressed many issues including a revision to the existing Order-in-Council, United Nations activities, trans-boundary feature names, the five-year strategic plan, names and official languages and toponymic data bases.

In conjunction with the meetings there was a tour for participants that included such places as Lower Fort Garry, Gimli, Fraserwood, Teulon and Stonewall.

Table SM.2

Manitoba Geographical Names Program

Geographical Name Decisions	372
Commemorative Name Certificates Issued	220
Map Manuscripts Checked	96
Supplementary Name Location Maps Prepared	213
Responses to Inquiries	1,173

Projects and Activities

Just over 100 maps covering northern Manitoba were forwarded to the Inuit Cultural Institute at Arviat (formerly Eskimo Point), N.W.T. These maps are to support a three-year (1989–1991) toponymic field research program for the District of Keewatin. As traditional hunting and trapping from Keewatin communities has, in the past, extended into Manitoba, it is anticipated that the study will include Native names for features in our province.

The slide presentation on Manitoba's Geographical Names was completed.

A major project was begun early in October to review the names of urban communities and neighbourhoods in the City of Winnipeg. The Department of National Defence was revising maps of the Winnipeg area and toponymic quality control was necessary. Meetings with the City of Winnipeg resulted in 222 name decisions being processed on one list.

On March 27th, Gerald Holm was appointed the Manitoba member on the Canadian Permanent Committee on Geographical Names, and was delegated by the minister to deal with matters respecting geographical nomenclature in Manitoba.

Presentations

A memorial ceremony was held in Lac du Bonnet on April 28th for Allan, Lynda and Dale Johnston, victims of an aircraft accident in January. The Minister of Rural Development presented commemorative name certificates for Allan Johnston Lake to the surviving member of the family, Kelli Johnston, and her grandparents, Mr. and Mrs. Peter Sol and Mr. and Mrs. Tom Johnston.

On June 24th, in conjunction with the opening of the MacGregor and District Archives, the assistant deputy minister presented 27 commemorative name certificates to next-of-kin of service personnel from the R.M. of Norfolk who died during World War II. Also presented was a certificate for North Norfolk Lake named in honour of more than 60 World War I casualties from the municipality. The ceremonies concluded with the presentation of a special map of Manitoba showing all the features named after the casualties from the area. This map, prepared by Jack Mercredi, will be on display in the newly opened archives building.

On October 13th a commemorative name certificate for Gabrielle Roy Island was presented to Mrs. Leona Corriveau at a brief ceremony at the St. Boniface College. This island, named on August 14th 1989, is near the community of Waterhen where Gabrielle Roy taught school. This part of the province became well-known as a subject of her literary works and so it was appropriate that the Waterhen Community Council recommended the feature to bear her name.

Table SM.3

Expenditure by Sub-appropriation 12-10(a) (Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		8.00	312,300	
Main Estimate Authority from General Salary Increase XXV			12,700	
Total Salaries	331,400		325,000	6,400
Total Other Expenditures	68,000		57,700	10,300

Field Surveys

The Field Surveys Section carries out field operations regarding the maintenance of inter-provincial boundaries and the provincial township survey system, develops a single integrated survey system for legal, mapping and engineering-related purposes, and provides legal surveying services for government land transactions. It also examines all legal plans of survey of Crown lands and maintains the official plan repository.

In the 1989-1990 fiscal year, there were no requirements for the restoration of damaged or missing inter-provincial boundary monuments. However, 154 missing section and quarter-section monuments were replaced. There were also 100 monuments upgraded with acceptable integration values established.

Three Global Positioning System receivers were acquired during the year. The use of this satellite positioning technology marks a fundamental change in our approach to surveying, and presents a major opportunity to simultaneously address land survey system maintenance problems and meet increasing demands for graphically referenced land information.

The provision of legal surveys to those government departments requesting them is a continuing service with all appropriate standards met. There were 84 plans registered and 26 information plans filed.

There were 48 plans of survey of Crown lands examined and approved within an acceptable time of 10 days. Systems are kept up to date and operational by using a continuing $^1/_4$ staff year to gather legal survey information to be used in land management.

There were 2,000 vertical and 100 horizontal points established and made available for mapping and other provincial activities.

Table SM.4

Expenditure by Sub-appropriation 12-10(b) (Field Surveys)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		19.00	686,200	
Main Estimate Authority from General Salary Increase XXV			20,100	
Total Salaries	712,600		706,300	6,300
Total Other Expenditures	299,500		416,200	(116,700)[1]
Total Recoveries	(50,600)		(170,000)	119,400[1]

[1] *Provision was made for surveys of Indian land claims under the* Northern Flood Agreement. *The number of survey requests was lower than anticipated. The cost of such surveys are recovered from the Department of Northern Affairs.*

Mapping

The Mapping Section provides a provincial topographic base mapping system capable of supporting the effective and efficient management of provincial resources, prepares geographical (thematic) base maps and related overlays as required by various government agencies for resource management and development, drafts plans of surveys to standards of the Land Titles Office under *The Surveys Act*, and provides consultation services to various projects as required.

Geographic Mapping

Geographic and specialty mapping services were provided to provincial departments and agencies with 121 projects being completed. These projects ranged in size from one to many maps with 454 maps or map-related products being completed during the year.

Projects undertaken include seven community boundary base maps, 12 forest-fire maps, 47 school division

boundary maps, Natural Resources' 60th anniversary historical map, seven Highways' sand and gravel mosaics, six court exhibit mosaics, 57 provincial electoral boundary maps, and Lake Francis Wildlife Management Area.

Revisions were made to maps of game hunting areas and vehicle routes, hospitals and personal care homes, 1989 fires, provincial electoral boundaries, resource guidelines, the 1:500,000 base map, Oak Hammock Marsh land owners, sport fishing areas, North of the 53rd tourist map, hiking trails, and community boundary maps.

The digital version of the 1:2,000,000 base map was released to Manitoba Hydro and the Department of Energy and Mines for evaluation.

Plan Drafting

The plan drafting unit prepared 81 plans of survey and 41 township diagrams. The unit also completed 329 revision projects related to these plans and diagrams.

Topographic Mapping

Compilation of the 1:20,000 maps of southern Manitoba continued in areas south and west of the City of Winnipeg. Data validation, editing, field proofing and quality control continued on previously compiled data. Fifteen multi-coloured topographic maps were printed and 15 digital topographic data sets were completed. The digital data sets will be used to support Geographical Information Systems and other digital applications.

The unit provided digital data sets to another provincial agency for the first time. Manitoba Hydro acquired four files of 1:20,000 digital topographic information in order to evaluate its use with their digital applications.

The mapping section also acquired high-level (1:60,000 scale) aerial photography and prepared and printed 107 township photo maps at a 1:20,000 scale. These photo maps are enlargements of the aerial photography which covers a single township and are augmented with place names and names of major roads, populated centres and features.

A joint project was completed which tested the capture of digital data using provincial specifications to support the needs of the federal and provincial governments. The cost of the project was shared equally by the governments under the umbrella of the Geographic Information Technology Development Program (G.I.T.D.P.) of the federal government.

A second project was negotiated under the G.I.T.D.P. which will see the creation of about 60 digital data sets which form part of the southern Manitoba 1:20,000 mapping program. The federal government is paying for the compilation contracts while the Province purchased the photography and is matching the federal contribution in kind by working on the ground control surveys, preparing the photography and inspecting the work of the contractors.

Table SM.5

Expenditure by Sub-appropriation 12-10(c) (Mapping)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		20.00	730,600	
Main Estimate Authority from General Salary Increase XXV			15,400	
Total Salaries	742,800		746,000	(3,200)
Total Other Expenditures	130,500		120,500	10,000
Total Recoveries	(53,900)		(31,000)	(22,900)

Map Distribution and Remote Sensing

The Map Distribution and Remote Sensing Section provides a central provincial map distribution service and maintains a provincial air photo library. It also maintains a remote sensing centre for use by government departments and agencies and the public, and provides photo-mechanical support to all branch mapping projects and the reproduction of material for sale.

Remote Sensing Centre

The second year of fully operational activities was carried out for the crop information system. From April to September 1989, data from the National Oceanic and Atmospheric Administration (N.O.A.A.) satellite was processed for the wheat-growing areas of Canada and the U.S.S.R. The information was delivered to agencies wishing to use the data source on a near real-time basis.

As a result of the interest generated from the forest map of Manitoba, created by using N.O.A.A. data, a project was undertaken in co-operation with Energy, Mines and Resources Canada to produce a similar map of the entire country.

Landsat satellite data was used to show vegetation change over time in the Thompson area. It was also used for the identification of corn fields in southwestern Manitoba to assist wildlife biologists in the management of waterfowl. Land cover mapping was carried out for Manitoba Hydro with the use of Landsat data. The information is used to select appropriate routes for power lines.

Geometric corrections were carried out on 16 SPOT satellite scenes for Manitoba Hydro for their land information system.

Sessions

Presentations were given to Manitoba Agriculture, P.F.R.A., Ducks Unlimited, Canadian Wildlife Service, Rural Development, Conservation Districts Authority, Canada Agriculture and the Interdepartmental Planning Board, on the use of remote sensing for land cover mapping. The activity relates to a proposed project to provide land cover data for the agricultural area of the province. When completed, information will be available in digital form or hard copy colour maps.

The Manitoba Remote Sensing Centre and the Manitoba Aerospace Technology Program sponsored a radar remote sensing workshop. The presentations were made by staff of the Canada Centre for Remote Sensing. The objective was to permit participants to upgrade their skills in radar remote sensing. There was a maximum registration of 30 and all the positions were filled.

Introductory sessions in radar were given to personnel from Manitoba Agriculture, Forestry, Geological Services, Parks and Wildlife. The purpose was to encourage participation in projects using radar data.

There were several tours of the remote sensing centre and demonstrations on the use of satellite data using image analysis techniques. These were given to groups ranging from one to 15 people from government departments, universities, the private sector and visiting dignitaries from across Canada and other countries.

Map Distribution

There were 65,388 maps distributed through retail sales and a dealer network that has grown to 75 outlets throughout Manitoba, northwestern Ontario and the northern United States. The objective for the year was to distribute 65,000 maps.

In addition to the regular marketing activities of having displays at outdoor-oriented shows, an awareness program was implemented by placing displays of the 1:20,000 photo township maps in communities throughout the area covered by the maps.

Air Photo Library

There were 8,085 current aerial photographs added to the library, bringing the total number on file to 792,982. During the year there were 30,396 prints supplied to customers.

Photo Mechanical Lab

During the year 29,777 products were produced in support of the air photo library's customers, the branch's mapping programs, and the mapping activities of other government agencies.

Table SM.6

Expenditure by Sub-appropriation 12-10(d) (Map Distribution and Remote Sensing)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		13.00	432,800	
Main Estimate Authority from General Salary Increase XXV			13,500	
Total Salaries	440,700		446,300	(5,600)
Total Other Expenditures	345,900		369,200	(23,300)
Total Recoveries	(176,700)		(185,000)	8,300

Computer Services and Data Management

This section provides long-range planning for the branch in the areas of system development and survey data management. It develops and manages a provincial survey information database with information available to all government and private sector users. It provides a user-requirement analysis and develops and implements an educational strategy to commit users to the use of positional data referenced to a common national framework (datum). It also establishes provincial standards for digital cadastral data and provides direction to the branch on all aspects of computerisation, including acquisition of hardware and software.

The development and implementation of a digital positional survey database has been planned, and the initial stages of implementation have begun. The developmental database management system INGRES has been used for the development and management of topographical and cadastral (property parcel) data, thereby providing rapid access to, and retrieval of, digital positional and associated attribute data. Control survey data and toponymic data are planned for inclusion over the next year.

The section provided information to more than 40 agencies comprising all levels of government, and responded to more than 200 requests for spatially referenced data, including requests from the private sector and the general public. The data has been used for such diverse purposes as the development of assessment maps by the City of Winnipeg, pilot land related information system (L.R.I.S.) projects undertaken by the University of Winnipeg, Linnett Graphics International Inc., the federal Department of Energy, Mines and Resources, and departmentally by the Forestry Branch for forest inventory purposes. In addition, data sets have been supplied to both Manitoba Hydro and the Manitoba Telephone System for surveying, engineering and records management.

Over the past year more than 35,000 new property (ownership) parcels have been developed in digital form, consisting of parcel identifiers, more than 150,000 computed parcel corners and an equal number of property boundaries.

These have been provided to the City of Winnipeg under a joint five-year surveying and mapping program for information referencing and property (assessment) mapping. Other major users are the Crown utilities, a number of provincial and federal departments, educational and research institutions,and industry.

All spatially referenced information produced by the section is referenced to the prevailing national datum. During 1990 a new international datum will be adopted by Canada and subsequently by a majority of the provinces. A number of seminars have been presented, and most provincial user agencies are agreeable to adopting the new datum. The process will be implemented as soon as

the new positional values become available. The new datum will be capable of supporting a cohesive and consistent system of surveys and maps in the digital form necessary for development of land information referencing systems (L.R.I.S.).

Branch standards have been developed for the management of cadastral (property ownership) data and are being incorporated into a provincial document on standards for land-related systems activities. The provincial standards committee is chaired by the chief of data management, and the Property Parcel Working Group is led by the head of cadastral computations. These provincial standards, in their initial version, are expected to be published in July 1990.

The section has developed preliminary plans for long-range office automation and has acquired systems over the year to support property and topographical digital data capture and mapping well into the 1990's. Other applications, such as toponymy and administrative procedures, are currently under review, as is branch co-operation with the departmental task force reviewing office automation.

Table SM.7

Expenditure by Sub-appropriation 12-10(e) (Computer Services and Data Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		12.00	480,400	
Main Estimate Authority from General Salary Increase XXV			11,800	
Total Salaries	472,900		492,200	(19,300)
Total Other Expenditures	139,700		136,400	3,300

Section 12

Water Resources Branch

Administration

The objective of the Administration Section is to provide the necessary direction and program co-ordination to ensure the optimum development, allocation and conservation of the water resources of the province.

Activities involve the provision of administrative and policy direction to branch programs, control and monitoring of program funds, administrative support and the monitoring of the efficiency and effectiveness of these programs.

The following Acts were administered by the branch.

The Dyking Authority Act
The Ground Water and Water Well Act
The Rivers and Streams Act
The Water Resources Administration Act
The Water Power Act
The Water Rights Act
The Water Supply Commissions Act

In addition to their branch activities senior management staff participated in the activities of the Prairie Provinces Water Board (Member and Alternative Member), Lake of the Woods Control Board (Manitoba Member), and the International Joint Commission, International Souris River Board of Control (Canadian Co-Chairman).

Table WA.1
Expenditure by Sub-appropriation 12-4(a) (Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Salaries	316,100	12.00	395,700	(79,600)
Total Other Expenditures	128,000		113,300	14,700

Water Licensing and Approvals

The objectives of the Water Licensing and Approvals Section are to protect and manage the province's water resource, including allocation of ground and surface water, to ensure sustainable development for present and future generations, and to cost-effectively minimise flood hazard and damage to ensure public safety and property-and-resource protection by administering *The Water Rights Act, The Water Power Act, The Water Resources Administration Act* and departmental and branch policies.

Administration of *The Water Rights Act* involves granting of licences, or authority, to use water in harmony with the terms and conditions outlined in the Act without compromising the need for sustainable development. Specifically, licences were not required for defined domestic purposes. Licences to use water for other purposes were issued with precedence according to the filing date of the application and the priority of use. Licences were also issued with concern for the uniform and fair distribution of water, and to safeguard domestic water supplies, senior licensees and riparians. Licensing and related activity for the fiscal year are shown in Table WA.2.

For the second consecutive year, drought conditions had an impact on water rights requests and enquiries. There was a 60% increase from the previous year in the number of licences issued. Licences issued for both irrigation and waterfowl conservation increased by 150% and 90%, respectively. Contrary to what might be expected, there was no significant decline in investigations of alleged violations of *The Water Rights Act*, particularly, flooding complaints. There were about 80 written inquiries regarding water rights or related matters, which is an increase of about 50% from previous years. Although not recorded, there was a dramatic increase in the number of telephone requests for general information about acquiring a water right, dam construction, low groundwater levels and other related matters.

Drought proofing expediency was achieved by establishing a policy to exempt qualified builders of small dams from acquiring a licence. Amendments to the Act and Regulations were implemented to reflect current policies which include the need for more flexibility in certain licence terms and conditions, and elimination of annual water-use charges for municipal use. A method to

Table WA.2
Water Licensing

	Surface Water	Groundwater
Applications Filed for Licence Renewal	41	21
Other Applications Filed	84	48
Licences Completed and Sent for Acceptance	115	40
Licences Issued		
Domestic (including Stockwatering)	10	0
Agricultural	0	1
Municipal	1	3
Industrial (including Mining Operations)	2	4
Irrigation (including Wild Rice Production)	53	18
Air Cooling and Heating	0	4
Flood Control	3	0
Fur Trapping	1	0
Thermal Electric Generating	1	0
Waterfowl Conservation	32	0
Recreation	1	0
Fire Protection	0	1
Total Licences Issued	104	31
Complaint Investigations	9	5

co-ordinate water rights licensing and environmental licensing was introduced to avoid overlaps in jurisdiction. A moratorium was placed on new groundwater irrigation development within the Assiniboine Delta Aquifer. A review of the completely allocated Boyne and Souris Rivers was undertaken with a view to licensing appropriate beneficial users in an orderly fashion.

Administration of *The Water Power Act* involves the granting and administration of licences for development of water power, calculation and preparation of invoices for collection of water power and land rentals from Manitoba Hydro and Winnipeg Hydro, and periodic estimates of these rentals. Also provided are documentation for removal of water power reserves and licences from Crown lands, and drafts for interim and final licences. The water power and land rental revenue for the 1989 calender year was $29,156,896, corresponding to the generation of 18,409,866,980 kilowatt-hours of electricity. Water power and land rental estimates were provided four times during the fiscal year. Draft final licences were prepared for the Kettle and Long Spruce generating stations.

Proposed Crown land uses were assessed on the basis of departmental and branch policies established to discourage inappropriate use of lands subject to flooding and erosion. A total of 452 parcels of Crown land were investigated.

Proposed waterway crossings were reviewed pursuant to *The Water Resources Administration Act* and on the basis of departmental and branch policies. Assessment of 826 waterway openings, most requested by the Department of Highways and Transportation, was carried out to ensure the provision of sufficient hydraulic capacity to minimise flood damage and hazards to the crossings and adjacent property.

Table WA.3

Expenditure by Sub-appropriation 12-4(b) (Water Licensing and Approvals)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Salaries	553,100	12.00	525,900	27,200
Total Other Expenditures	29,700		26,300	3,400

Water Management

The objectives of the Water Management Section are to monitor, evaluate, develop and allocate the water resources of the province to optimise their use for social and economic development; to improve the net productivity of those agricultural lands whose productivity is inhibited by excess water; to administer legislation and policies pertaining to the reduction of damage from flooding, and to investigate both structural and non-structural means of reducing existing levels of agricultural, personal and property damage caused by flooding.

Activities involved the monitoring and operation of 107 provincially owned dams, the Red River Floodway, Portage Diversion and other flood-control works; maintaining 4,320 km of provincial waterways, including crossings; and the reconstruction of waterways, as necessary, within funding limitations. In conjunction with these, planning and feasibility studies were prepared, and the priorisation of water supply and conservation projects, agricultural drainage systems, agricultural flood- and erosion-control projects, dyking systems and other flood-control works were carried out. In addition, studies were done of inter-provincial and international water problems and development opportunities; and of providing a water resources planning service to conservation districts and rural municipalities. Also, all proposed subdivisions, planning statements and development plans and bylaws respecting flooding, drainage erosion and bank stability were reviewed and recommendations made. Flood permits were issued in designated flood areas and compliance was monitored.

Flood Damage Reduction

During the spring of 1989, the three major flood-control works, the Red River Floodway, the Portage Diversion, and the Shellmouth Reservoir, were operated to reduce flooding along the Red River and the Assiniboine River, respectively.

Through the application of *Provincial Land Use Policy No. 11*, enacted by Order-in-Council in November 1980 under *The Planning Act*, the Province exercised control over development in areas subject to flooding, erosion, river bank instability, landslides and subsidence. During the year 490 subdivision applications and 90 development plan and zoning bylaw amendments were reviewed. Input was provided for three planning documents.

After the 1979 flood the entire Red River valley, from Emerson to Winnipeg, was designated a flood area under *The Water Resources Administration Act*. Under the Act and *Manitoba Regulation 23/88 R*, any person wishing to build in the designated area must first obtain a permit from the Water Resources Branch. The permit requires that any structure to be built or erected, shall be floodproofed to prevent damages up to the 1% flood level. Fifty-four permits were processed during the year.

After the flood risk area of the City of Winnipeg was designated pursuant to the *Canada-Manitoba Flood Damage Reduction Agreement* on February 15th 1980, the Province amended *The City of Winnipeg Act* to require floodproofing of structures in the designated area. Under Section 494.09 of the Act, the minister may make an order, under certain conditions, to vary the floodproofing criteria established by *Manitoba Regulation 439/88*. Twenty-one applications for variances were processed during the year.

During the year Manitoba Natural Resources and the Manitoba Disaster Assistance Board of the Department of Government Services initiated a joint program to inventory all floodproofing measures in the Red River valley constructed after the 1966, 1974 and the 1979 floods. The Engineering and Construction Branch conducted the surveys and the Water Resources Branch evaluated the adequacy of the floodproofing measures as compared to the 1% flood level. Government Services funded the surveying costs. Assessment of the R.M. of Morris was completed with 29% of the 339 farm sites or individual holdings meeting the requirements.

Reservoir Regulation

Most major reservoirs were replenished during the 1989 spring runoff with the exception of Shellmouth and Morden. Controlled dams were operated to attain reservoir levels within their normal ranges. Lake Manitoba remained within the permissible regulated range of 247.15 m to 247.76 m. Dauphin Lake peaked at 260.35 m following the spring runoff and receded gradually to the lower limit of 260.00 m by November, recovering gradually to 260.24 m by March 1990. The Lake of the Prairies was down to 427.71 m prior to spring runoff, and peaked at 429.05 m. The Morden Reservoir filled to 327.74 m by May 1989, and then continued to recede gradually to 325.14 m by March 1990.

Land and Water Strategy

The land and water strategy which involves several government departments has three main objectives: to maintain and enhance resource productivity, to increase job opportunities, and to improve environmental quality. Under the land and water strategy are several sub-strategies, each addressing individual resources that are inter-related, such as, for example, water, soil, forests, minerals, fisheries and wildlife. Local governments, other organizations, industry and individuals are all being encouraged to participate in the process of combining economic and environmental concepts.

Given the far-reaching importance of water to our economy, water was the first sub-strategy presented. A *Workbook on Water* was developed by the Department of Natural Resources followed by a *Workbook on Soil* from the Department of Agriculture. Public consultation and review of both the water and soil sub-strategies continued in the spring of 1989. Efforts then concentrated on assimilating the input. A summary document entitled *What You Told Us* was prepared and distributed in December 1989. The document includes a report on the process, a summary of input from all sources, and suggested revised water and soil policies stemming from that input.

A *Workbook on Forests* that included draft forest policies was subsequently prepared and distributed, and public meetings were held in a number of communities early in 1990. Cabinet subsequently finalised the water and soil policies based on the feedback received.

Assiniboine Delta Aquifer

The development of centre pivot irrigation systems using water from the Assiniboine Delta Aquifer has increased significantly to about 85 units in the past decade. A detailed evaluation of the capacity of the aquifer was completed in 1987. This evaluation was carried out primarily to establish the availability of water for irrigation. Based on average precipitation, approximately 89,000 dam^3 of water enters the aquifer annually. Some of this water is withdrawn for irrigation or for farm water supplies and the rest naturally discharges into the streams that flow across the aquifer. The current allocation is 16,000 dam^3 annually or about 18% of the sustainable yield. Although indications are that the sustainable yield is substantial, residents are concerned about increased withdrawals from the aquifer, particularly during drought periods.

Attention became focused on the Assiniboine Delta Aquifer as a result of the proposed Westlake regional pipeline intended to supply water from the aquifer to communities and farms in the Gladstone-Plumas areas. Public hearings into the matter were held by the Clean Environment Commission in the summer of 1989. One of the recommendations resulting from these hearings was the formation of an aquifer management advisory committee.

The department established an Assiniboine Delta Aquifer Management Advisory Board comprising representatives from various agencies, interest groups, local government and industry. The mandate of the board is to formulate a long-range plan for the water resources of that area. A consultant was retained to undertake an independent review of the sustainable yield of the aquifer.

Oak and Plum Lakes

The Oak and Plum Lakes wetland complex in the southwestern corner of the province has been the subject of conflicting resource interests for the past few decades. One of the main difficulties encountered in trying to solve the conflicts between agricultural and wildlife interests has been the complex topography and hydrology of the numerous marshes known as Plum Lakes. A detailed topographic map of the Plum Lakes area was completed by consultants for Ducks Unlimited and the Canadian Wildlife Service. However, computer incompatibility between the digitizing contractor and the department have delayed the development of options for regulation. A report presenting the options and recommendations to the Oak and Plum Lakes Management Board will be completed as quickly as possible after the topographic maps become available.

Whiteshell Lakes

Since 1985 modifications to the operating rules of the stoplog dams of the Whiteshell system have been tested to maintain desirable levels for recreational use while benefiting fish, wildlife and wild rice production. Very high spring and summer runoffs were experienced in 1989. Following a review of the operating rules, and the experience gained in 1989, some modifications to procedures were made for Brereton Lake and a slightly higher range was adopted for White Lake. Modifications to the dams on Jessica, White and Brereton Lakes were studied to improve operating capabilities under conditions of high flows.

Dauphin Lake

Dauphin Lake has long suffered from the processes of erosion, siltation and eutrophication, resulting largely from increasing human activity throughout the basin. This situation has been a growing concern and conflict among various interest groups for several decades. Agricultural interests generally desire lower lake levels to permit increased native hay production. Recreational interests prefer moderate to high lake levels to provide increased depths for boating and swimming, and to alleviate undesirable aquatic growth. Wildlife and fisheries interests desire moderate to higher levels to improve habitat and vegetation in the peripheral marshes of the lake.

A technical advisory group prepared the report, *Dauphin Lake Opportunities for Restoration,* which defined the key resource issues and suggested options for restoring the Dauphin Lake basin. A public meeting was held in January to introduce the report and to establish a Dauphin Lake Basin Advisory Board. The intent is to have the board members, consisting of resource owners, managers and users, work together with a technical advisory group to formulate and implement a basin management plan. An executive committee was elected to facilitate the board's activities.

Pembina Triangle Water Supply Strategy

Drought conditions which continued into 1989-1990 demonstrated very dramatically that the Red River valley west is an area where supplies of good-quality water for municipal and domestic use are not as secure as required to ensure continued economic growth. The Pembina Valley Development Corporation (P.V.D.C.) and the Lower Red River Valley Water Commission (L.R.R.V.W.C.) established a task force to examine the issue and to develop alternatives to solve the problems of water supply. All reasonable sources of water supply are being examined in terms of social, economic and environmental considerations. The process is a co-ordinated approach by private consultants and appropriate government agencies with significant input from local residents. Proposals which will provide supplies far in excess of reasonable future demands or which engender significant local opposition are not being considered. The planning horizon is 50 years, that is, to the year 2040.

A work plan identifying nine tasks was developed with activities under each task to be periodically reviewed and revised as necessary. The development of the water supply strategy is being jointly funded by Canada ($50,000) and Manitoba ($50,000) under the *Canada-Manitoba Agri-Food Agreement.* The P.V.D.C. and the L.R.R.V.W.C. are jointly contributing an additional $40,000. Cost estimates were prepared for the principal options. In early March the task force presented these options at public meetings in Morris, Altona, Carman and Morden. The task force is proceeding to select the components of a preferred plan to meet the water requirements of each region in the study area. More detailed designs and cost estimates will then be prepared. An assessment of environmental impacts will also be made. Regional economic impacts are being studied by consultants from the Agricultural Economics and Farm Management Branch of the University of Manitoba.

Washow Bay Water Management Project

The objective of the project is to upgrade the existing drainage network and provide a long-term water management system within the 590 km^2 Washow-Icelandic area for stable viable agricultural production.

Manitoba Agriculture, Manitoba Natural Resources, and the R. M. of Bifrost agreed to construct Phase One of the Washow Bay Drainage Project in 1988. During the 1989-1990 fiscal year all right-of-way acquisition for Phase One was completed and approximately eight kilometres were completed on the Ben Johnson, Kris Johnson and Grindstone Road Drains. Phase One, except for some minor items, was completed in the fall of 1989, at a cost of $1,138,000 (Province: $1,038,000 and R.M. of Bifrost: $100,000). The outstanding deficiencies will be completed in 1990. The on-farm drainage component of *Phase One* ($85,000) is being implemented through the existing Washow-Icelandic Soil and Water Management Committee.

An Agreement Respecting Phase Two of the Washow Bay Drainage Project between the Province (Departments of Agriculture and Natural Resources) and the R. M. of Bifrost was signed in September 1989. The agreement provides for improving the existing drainage within the Okno Drain area through a system of drains, dykes and portable pumps, at an estimated cost of $2,611,500 (Province: $2,383,000 and R. M. of Bifrost: $228,500). The Province is responsible for providing, at its own cost, the engineering services required for the survey and design of the project. Construction of Phase Two is anticipated for completion by March 1997. The on-farm drainage component of Phase Two ($228,500) will be implemented through the existing Washow-Icelandic Soil and Water Management Committee.

The Washow Bay Project will provide more viable farm units due to increased yields on lands where excessive wetness and flooding restricted production in past years. Thus, the farm service businesses within the local community will be strengthened due to the improved drainage.

Jackson Lake Reservoir Expansion

Canada and Manitoba have agreed to expand the capacity of the Jackson Lake Reservoir by approximately 90% to 3,690 dam^3. The purpose is to provide an adequate and reliable water supply during extended dry periods to the Towns of Austin and MacGregor, as well as for local landowners downstream and adjacent to Squirrel Creek. The project involves raising the existing earth fill dam by 1.8 m and construction of a dyke along the north shore of the reservoir. The total cost of the project is estimated at approximately $420,000 which will be paid for and constructed by Canada under the *Canada-Manitoba Agri-Food Agreement*. An Environment Act Licence approving construction and operation of the project was issued by Manitoba Environment on January 18th 1990. The federal environmental assessment and approval for the project were received on January 29th 1990. Manitoba acquired all the additional rights-of-way during 1989-1990. Engineering design, surveys and construction management are being provided by the P.F.R.A. Construction will commence in July and completion is scheduled for the fall of 1990. The Province will own and operate the project upon completion.

The project will provide increased benefits for waterfowl habitat and wildlife production. There will be increased benefits for development of a sport fishery which will result in a more attractive area for recreational use.

Stephenfield Reservoir Expansion Project

Under the *Canada-Manitoba Agri-Food Agreement* Canada and Manitoba have agreed to expand the capacity of the Stephenfield Reservoir by approximately 20% to 5380 dam^3. The purpose is to provide additional water for downstream users along the Boyne River and greater assurance of winter flow in order to satisfy their winter water requirements. The project involves raising the existing concrete spillway of the Stephenfield Dam by approximately 0.6 m at an estimated cost of $195,000, to be financed and constructed by Canada. Manitoba Environment issued an Environment Act Licence approving construction and operation of the project on January 15th 1990. Federal environmental assessment and approval for the project were received on February 19th 1990. Manitoba is currently acquiring the additional rights-of-way required for the project. The P.F.R.A. is providing the engineering design, surveys and construction management. Construction is expected to start in September 1990 with completion scheduled for November 1990. The Province will own and operate the project on completion.

The increased reservoir depth will improve the existing fishery and will have added benefits for waterfowl habitat and wildlife production. Thus, there will be increased benefits for development of a sport fishery. The new full supply level will also result in enhancement of the reservoir as a more attractive place for recreational use.

North Duck River Project

The purpose of this project is to reduce the severity and frequency of damage associated with flooding and erosion of agricultural land along the lower North Duck River by constructing a headwater storage dam in the upper reaches of the watershed.

A design study was completed in 1988 and the construction cost was estimated at approximately $600,000. Manitoba Natural Resources has applied for an Environment Act Licence for the construction and operation of the structure.

The project will result in the implementation of soil and water management practices due to reduced flood damage to existing development and the reduced potential for future flooding, thereby promoting the long-term productivity of the agricultural community within the L.G.D. of Mountain.

Pasquia Polder III Project

The purpose of this project is to improve the land base of the Pasquia area by drainage reclamation with the ultimate objective being to develop approximately 7,200 ha of land for stable, viable agricultural crop production.

The project, being developed by Manitoba Natural Resources with no federal involvement, will cost approximately $3.55 million, and will involve the construction of two large pumping stations and approximately 58 km of drains. During 1989 the Province constructed the Victor Jory Pump Station and approximately 2.4 km of dragline on the Pasquia Lake Drain. Approximately 9.6 km of the Pasquia Lake Drain has been reconstructed to date.

The Polder III Project will ultimately result in a substantial economic benefit to the local agricultural community. The improved drainage will provide more viable farm units, thereby expanding the farm acreage which will strengthen the local farm service businesses and lead to improved animal health services. The project will benefit both the local farming community and the Town of The Pas.

Pelican Lake Enhancement Project

The purpose of the project is to provide improved water levels and water quality in Pelican Lake. In 1989 the Province conducted an environmental assessment of the project, including the impact on the hydrology of the Pembina River basin. Under *The Manitoba Environment Act* Manitoba Natural Resources applied for a licence for construction on August 10th 1989. The Clean Environment Commission conducted public hearings regarding the project on March 8th 1990.

The Pelican Lake Project is being funded on a 50-50 cost-sharing basis under the *Canada-Manitoba Agri-Food Agreement*. The project involves the rehabilitation and improvement of an abandoned diversion channel to allow controlled diversions of Pembina River flows into Pelican Lake when lake levels are low. Works would include a weir on the Pembina River, inlet and outlet channel improvements and two gated control structures. The cost is estimated at $600,000 and the federal government will contribute up to a maximum of $300,000 under the terms of the agreement. Construction of the project is expected to begin in September, with completion by November 1990, subject to federal and provincial environmental approvals and licences being obtained and required rights-of-way being acquired.

The project will result in the regulation of lake levels at an acceptable range. The stabilised levels will enhance the recreational opportunities for boating, swimming and fishing, thereby promoting the local tourism industry. The more constant lake levels will reduce damage to cottage owners' properties caused by the high levels and a raising of low levels which, in the past, have rendered the lake virtually useless during recreational seasons.

Carman Flood Protection Diversion

The purpose of this project is to provide flood protection for the Town of Carman, an agricultural service centre, up to the 1% flood level. The Carman Flood Protection Diversion is being constructed under the *Canada-Manitoba Agri-Food Agreement*. The *Memorandum of Understanding* was signed on September 30th 1988, whereby the cost sharing would be $4.0 million plus engineering and project management costs of $0.9 million from the federal government, $1.75 million from the Province, and $0.35 million from the Town of Carman.

The project got under way during the 1989-1990 fiscal year, shortly after having received an environmental licence. Approximately 76 ha of land were purchased and/or expropriated from seven landowners from P.T.H.13 east to the Norquay Channel. In August the first contract on the project was awarded for a cost of $619,925 for the earthwork for this first half of the diversion. The major part of the work was completed by December. The contract for the erosion control structures in this reach was awarded in September for $845,022. Although the land was not secured for the upper half of the diversion from P.R.245 to P.T.H.13, the earthwork contract was awarded for $541,030 in January 1990. Acquisition and/or expropriation was initiated for the 96 ha from six landowners between P.T.H.13 southwest to P.R.245, with a possession date of April 10th 1990. Actual expenditure in 1989-1990 was $1,317,000 for land and construction costs.

Gimli Diversion Project

The project, when completed, will protect the town to the 1% level from high water-levels caused by natural drainage and flood flows. Activity involves the construction of a diversion and related crossings.

This was the first year of a three-year project estimated to cost approximately $1.4 million. Due to problems in acquiring the necessary right-of-way, excavation work scheduled for 1989-1990 had to be cancelled. Work which

was carried out involved the construction of a small highway diversion and the purchase of a portion of the right-of-way which could be obtained by mutual agreement. Total expenditure in 1989-1990 was $92,332.

Cooks Creek Diversion Project

This project is intended to enhance agricultural productivity by providing an efficient outlet for an improved drainage system for 180 km^2 in the R.M. of Springfield.

During the 1988-1989 fiscal year the federal government agreed to pay the full estimated cost of $580,000 to complete the diversion under the *Canada-Manitoba Agri-Food Agreement*. The Province would initially bear the cost, do the work and invoice the federal government for actual costs. The project was completed in 1989-1990 at a cost of $20,675 for a total cost over the two years of $576,917.

Table WA.4

Expenditure by Sub-appropriation 12-4(c) (Water Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Salaries	1,427,900	35.00	1,459,800	(31,900)
Other Expenditures	4,011,200		4,094,500	
Grants / Transfer Payments	35,600		0	
Total Other Expenditures	4,046,800		4,094,500	(47,700)

Hydrotechnical Services

The objective of the Hydrotechnical Services Section is to provide continuing inventory of ground and surface waters, flood and runoff forecasting, hydrological standards and related studies, groundwater studies and computer programming.

Activities include streamflow, flood and groundwater level forecasting, investigations for groundwater management, and conservation and operation of surface and groundwater data networks. In addition, hydrological analyses are conducted for various internal and external studies and for the setting of hydrological standards. Recommendations pertaining to water use licensing are also made.

Hydrological Monitoring and Reporting

Recorded streamflows and water levels in Manitoba's rivers and lakes form the basic data on which all water resources decisions and studies are based. The information is used for water supply determination, water control structure operation, flood control and many water-related studies. Streamflow and water level data for the province is gathered, stored, analysed and disseminated.

Water level data was gathered at 144 hydrometric stations throughout Manitoba. Included was an intensive monitoring of the Assiniboine River, between Treesbank and Holland, in the summer and fall of 1989 to estimate the groundwater discharge from the Assiniboine Delta Aquifer. The data for 52 of the hydrometric stations was contributed to the federal Water Resources Branch for publication in their *1989 Annual Surface Water Report*. A further 295 flow, level and sediment stations were operated by the federal Water Resources Branch under the terms of the *Canada-Manitoba Agreement for Water Quality Surveys*. All recorded data was entered in the branch's computer for use in hydrological studies.

Data on water levels and streamflows for 27 lakes, six reservoirs and 29 river stations was compiled and distributed weekly to several hundred users. This included the operational status of six controlled lakes and reservoirs.

Isohyetal maps of storm precipitation and monthly precipitation were prepared and distributed after each storm and towards the end of each month.

Drought-related parameters such as snow cover, precipitation, runoff, temperatures, evaporation and soil moisture were closely monitored and their present and future effects on water supplies ascertained. Trends and variabilities in precipitation were related to those of past years and decades.

Reports on the drought and its impacts on surface and groundwater supplies in Manitoba were prepared for the provincial Drought Monitoring Committee, the Federal-Provincial Executive Drought Committee, and for the *Prairie Provinces Water Supply Conditions Report*, assembled by P.F.R.A. These reports included information on the likelihood of water shortages arising in the future under specified weather scenarios.

Several reports were prepared to describe the effect of drought on water supplies and on actions being taken to mitigate water shortages. These were mailed to interested parties and distributed to the public and the media.

Hydrological and Climatological Data and Studies

Hydrological and climatological data and studies were provided at the request of clients. Hydrological data included historical water levels and streamflows as well as design discharges and levels. Climatological data included precipitation amounts and rates, wind speeds and evaporation, while studies involved determination of the effects of these parameters on runoff, streamflow and lake levels. Hydrological studies included the determination of the firm annual yield of Stephenfield Lake and Lake Irwin, an estimate of the firm annual flow for the Red River at Emerson, and for the proposed L-6 dam site in the Turtle Mountains. Climatological studies included computation of the probable maximum snowmelt and rainfall for the Assiniboine River upstream of the Shellmouth Reservoir for use in estimating the probable maximum flood.

River and Water Supply Forecasting

The branch's River Forecast Centre prepared forecasts of river flows and stages for the Red, Assiniboine, Souris and Saskatchewan Rivers during the drought of 1989. Forecasts of minimum flows and water levels prevented unnecessary costs for emergency upgrading to secure town water supplies. The centre also prepared forecasts of lake and reservoir levels, particularly where water supplies were seriously threatened by drought. This facilitated the operation of control works and the formulation of recommendations with respect to water rationing and the development of alternative water sources.

Flood forecasting during the spring of 1989 was focused on the Red River where melt of a heavy snowpack produced record flooding in the headwater area upstream from Fargo, North Dakota. Flooding did not occur on the Red River in Manitoba due to a very gradual melt and a lack of spring rain. Daily flood information sheets and river forecasts were prepared from April 5th to May 3rd, and about a half dozen news releases were issued. Daily information sheets were also prepared for the Assiniboine and Souris Rivers. A flash flood watch was issued on June 14th 1989 for the southern Interlake where 125 to 200 mm of rain fell within 36 hours.

During February and March 1990 spring runoff outlook maps were prepared for 23 locations on the Red, Assiniboine and Souris Rivers, and for many smaller streams, lakes and reservoirs in the province. These forecasts were distributed to the media as well as to all municipalities, cities, towns, villages, local government districts, and Indian Bands in Manitoba, and to flood fighters and government officials.

River Forecast Development

Development of improved water supply and river flow forecasting procedures continued. The updating of graphical runoff forecasting procedures was begun. Computer programs were prepared to improve data access and manipulation. Use of satellite microwave snow cover maps for river forecasting was tested.

Aquifer Administration

Large scale groundwater developments in the Assiniboine Delta Aquifer caused considerable concern among local residents and required extensive participation in local meetings, including open house meetings and environmental hearings. Liaison with licensed water well contractors was maintained through participation at quarterly meetings of the Manitoba Water Well Association. A number of co-ordination meetings were attended with program managers from Manitoba Environment to ensure compatibility and integration of programs dealing with water quantity and quality.

Aquifer Data

Aquifer data collection and groundwater information services for the Province continued in 1989-1990. Because of the drought some extra effort was required to provide up-to-date water level information.

Licensed water well contractors operating in the province provided 2,700 water-well drillers' reports. The groundwater monitoring network was expanded by installing 11 new groundwater monitoring stations and five automatic rain gauges. Four hundred and sixty-six groundwater level and quality and 11 rainfall monitoring stations were in operation. All groundwater data was incorporated into a permanent computerised storage and retrieval system.

In response to specific requests, 225 groundwater availability and 86 groundwater pollution hazard appraisals were prepared. Numerous telephoned and written inquiries about groundwater conditions in various areas were dealt with verbally or by mail with specific resource information and advice. Because of the drought, monthly groundwater level reports were prepared during the summer and autumn. Groundwater resource reports were prepared for two planning districts and two municipalities. A groundwater pollution hazard map was prepared for one conservation district. An aquifer map, groundwater data tables and information were provided for the provincial *State of the Environment* report. In response to requests from the Clean Environment Commission and other agencies, groundwater information and advice related to groundwater resource protection and development were provided in presentations at several hearings and meetings.

Aquifer Definition

Regional hydrogeology studies continued during 1989-1990 with the production of photo negatives of the updated Neepawa map sheet, groundwater availability maps and sampling of 31 wells in the Swan Lake map sheet area in preparation for updating these groundwater availability maps during 1990-1991. Studies of the regional hydrogeology of the carbonate aquifer system continued. Co-operative work was carried out with the Manitoba Museum of Man and Nature to examine the detailed geochemistry of saline springs west of Lake Winnipegosis. Studies were also carried out, co-operatively with Manitoba Energy and Mines, of the physical hydrogeology and geochemistry of springs in the Grand Rapids area. This latter study will serve as an excellent benchmark to examine hydrogeochemical development in the carbonate aquifer system throughout Manitoba.

Studies of the detailed hydrogeology of tills in Manitoba were begun at two sites during 1989-1990. Seven piezometers in three nests were installed in the Teulon area to examine the carbonate rock-derived tills of the Interlake. Studies of the hydrogeology of the shale-rich clayey tills found throughout western Manitoba were begun at a site near Rossburn originally examined by the Manitoba Hazardous Waste Corporation as a potential site for waste storage and disposal. It is hoped that detailed studies on these two sites over the next several years will lead to a comprehensive understanding of both physical and geochemical hydrogeology of tills in southern Manitoba.

Aquifer Capacity

The monitoring of groundwater levels, water usage and water quality were continued in the 10 major groundwater usage zones in Manitoba. The major activity was the evaluation of the Assiniboine Delta Aquifer, especially with regard to effects of the proposed Westlake Pipeline. A report was completed on the effects of the proposed pumping for the Westlake Pipeline. Also, presentations on the aquifer hydrology and on the groundwater effects of the Westlake Pipeline were prepared for hearings of the Clean Environment Commission on the Westlake Project.

In related work, due to the interest in the groundwater relationship of the Assiniboine Delta Aquifer to the streamflow of the Assiniboine River, a paper on discharge to streams from the aquifer was prepared and presented to the International Coalition's conference held in Grand Forks in November.

During the year the Winkler Aquifer investigation was begun. This involved preparing presentations for funding from the *Canada-Manitoba Agri-Food Agreement*, developing a field investigation program and then, in conjunction with the Prairie Farm Rehabilitation Administration, doing test drilling and deep observation well installations. Part of this work involved making presentations to local interest groups on the Winkler Aquifer hydrology.

Aquifer Modification

In order to provide background information for a proposed artificial recharge project for the Winkler Aquifer, an intensive water quality sampling program was carried out on Shanno[illegible] Creek during the 1989 spring runoff. This involved collecting daily water samples to be analysed for numerous parameters including agricultural chemicals and the taking of stream flow discharge measurements daily.

Two cases of water quality deterioration in domestic wells were investigated in the area north of Winnipeg. In both cases an attempt was made to rehabilitate the wells by sealing the lower portion of the borehole.

Numerous field investigations were carried out for aquifer modification purposes. These included investigations in the Washow Bay Water Management Project, the Cochrane Creek drainage system, the inter-municipal drainage system and in the Grosse Isle area. In addition, periodic work was carried out on aquifer modification projects at Ross Creek and the South Lateral Drain, in which the branch has a long-standing commitment.

Table WA.5

Expenditure by Sub-appropriation 12-4(d) (Hydrotechnical Services)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Salaries	1,158,000	27.00	1,143,500	14,500
Total Other Expenditures	832,800		836,900	(4,100)

Regional Water Management

The objectives of the Regional Water Management Section are to manage branch programs on provincial water control works, to represent the branch and liaise regionally, to provide services and guidance to local authorities, to administer *The Water Rights Act* as it pertains to drainage works, and to participate in branch management and initiatives. The responsibility and authority for regional water management is vested in five regional water managers.

The management of operational, maintenance and capital programs is accomplished by identifying needs, developing projects, and overseeing program delivery in conjunction with the Engineering and Construction Branch which provides project development services and budget co-ordination.

The regional water managers maintain an ongoing relationship with municipalities, conservation districts, regional representatives of other branches and departments, and others, and also respond to representations from the public.

Requests for services from municipalities and conservation districts are first investigated, and then programs are proposed and developed with the assistance of surveys and technical input from the Engineering and Construction Branch.

The regions of the Water Resources Branch are the Southeastern, Southwestern, Western, Northwestern, Interlake, Eastern and Northeastern. For administrative purposes, the Western and Northwestern Regions are combined, as are the Eastern and Northeastern Regions.

Maintainance Program

The purpose of the program is to operate and maintain provincial water control works under three categories: land drainage, flood damage reduction, and water allocation.

Land drainage involves maintaining the integrity and existing capacity of 4,320 km of provincial waterway channels primarily through silt removal, side slope stabilisation, erosion control, mowing and spraying vegetation, and crossing repairs.

Flood damage reduction pertains primarily to flood protection dykes and floodways, such as the town dykes in the Red River valley, the Ste. Rose dykes, the Saskatchewan River dyking, the Lake Winnipeg dykes, the Red River Floodway, the Portage Diversion, and the Shellmouth Dam.

Water allocation involves maintaining 91 provincially owned dams.

Total program expenditure for the fiscal year was $3,793,656.

Infrastructures for the Enhancement of Agricultural Productivity

The purpose of this program is to reconstruct existing provincial waterways so that the damage to crops caused by excess summer rainfall will be reduced. Provincial waterways serve as the outlets for the municipal agricultural drainage network. In 1989-1990, a total of 15

projects were undertaken under this program. Of these, seven projects were in the southeastern part of the province: the Aux Marais River, the D-20 Drain, the Number 2 Drain, the South Lateral Drain (two projects), the South Shannon Drain, and the Upper Ridgeville Drain. Four projects were in the Interlake Region: the Camper Drain, the Fishline Drain, Lake Francis, and Swan Creek. Three projects were in the Western Region: the Community Pasture Drain, Jackfish Creek, and North Duck River. The Dubas Drain was the only project in the Eastern Region.

Total program expenditure for 1989-1990 was $1,210,459.

Bridge Replacement Program

The purpose of this program is to replace or effect major repairs to badly deteriorated bridges over provincial waterways. At present there are 990 bridges over provincial waterways. Of these 24 were worked on under this program in 1989-1990. The 13 bridges in the Southeastern Region were on the Allison Drain (two bridges), Boyne Channel, Codner Drain, Domain Drain, 4-N Dykes, Menard Drain, Saint Joseph Drain, Saint Malo Canal, Scott Coulee, South Lateral Drain, Tourond Creek and Vita Drain. The six bridges in the Interlake Region were on Ashern Drain, Ditchfield Drain, Meadows Drain, Morweena Drain, Netley Creek, and Wavey Creek. The three bridges in the Southwestern Region were on Glen Cairn Crossing, Pipestone Creek, and West Badger Creek. The one bridge in the Western Region was on Wilson River, and one bridge in the Eastern Region was on Bear Creek.

Total program expenditure for 1989-1990 was $513,915.

Table WA.5
Expenditure by Sub-appropriation 12-4(e) (Regional Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Salaries	344,300	6.00	340,600	3,700
Total Other Expenditures	40,900		38,500	2,400

Canada-Manitoba Flood Damage Reduction Program

The purpose of this program is to administer three agreements signed by the federal and provincial governments in December 1976, namely, to designate urban flood risk areas, to investigate means of reducing or preventing flood damage in flood plains, and to improve procedures for forecasting floods.

This program involves the undertaking of hydraulic engineering studies to map the flood-prone areas requiring designation; to produce engineering plans to designate the flood-prone urban areas; to initiate and monitor the production, for public distribution, of flood-risk maps and brochures about designated flood-prone areas; to undertake engineering studies to improve the flood forecasting procedures for the Red, Assiniboine and Souris Rivers; and to provide flood and runoff forecasts during any flood period during each year.

Flood Risk Mapping and Studies for Flood Damage Reduction

On December 20th 1976 the federal and provincial governments entered into a flood damage reduction program by signing the *Agreement Respecting Flood Risk Mapping* and the *Agreement Respecting Studies for Flood Damage Reduction*. Under these agreements the flood risk portions of urban areas were to be mapped and flood damage reduction measures were to be identified and, where economically feasible, works were to be constructed. The communities that have had works constructed are identified in Table WA.6. This program, terminated at the end of the 1987-1988 fiscal year, was extended to March 31st 1996 in January 1990 by the federal and provincial governments. The *Agreement Respecting Flood Risk Mapping* received $500,000 and the *Agreement Respecting Studies for Flood Damage Reduction* received $200,000 in additional funding.

Table WA.7

Communities Designated for Flood Damage Reduction

Community	Designation Date
Melita	December 20th 1979
Wawanesa	December 20th 1979
Elie	November 5th 1980
Winnipeg	February 15th 1980
Souris	October 1st 1980
Brandon	March 26th 1982
La Salle	November 26th 1982
Sanford	November 26th 1982
Starbuck	November 26th 1982
Swan River	May 11th 1983
Lorette	September 13th 1984
Carman	June 13th 1984
Dauphin	February 15th 1984
Arborg	November 5th 1987
Fisher Branch	November 5th 1987
Riverton	November 5th 1987

By the end of the agreement studies had been completed for Brandon, Brunkild, Carman, Dominion City, Emerson, Letellier, Morris, Rosenort, St. Adolphe, St. Jean Baptiste, Ste. Rose du Lac, Souris and Wawanesa.

Flood Forecasting Agreement

The *Agreement Respecting Flood Forecasting* was signed by Canada and Manitoba on March 31st 1981. The objective of the agreement was to provide for the improvement of flood forecasting capabilities for the Red, Assiniboine and Souris Rivers in Manitoba. The agreement terminated on September 30th 1989.

During the last six months of the agreement, activities were concentrated on the transfer of technology from term staff hired under the agreement to regular staff. Use of a dynamic channel routing program for the Red River and the Hydrologic Simulation Program–Fortran (H.S.P.F.) channel routing for tributaries were foremost among the transfers. Organization of paper and computer files from the seven-year study was also effected. Reports on the studies made under the agreement were distributed to relevant government departments, universities and interested parties across Canada, and to a few individuals in the United States. New methodologies for electronic climatological data acquisition were investigated.

Canada-Manitoba Flood Protection Projects Agreement

On March 10th 1983, the governments of Canada and Manitoba signed an *Agreement Respecting the Upgrading of Ring Dykes in Certain Communities in the Red River Valley*. The agreement provided for the upgrading of the existing dyking systems of eight communities in the Red River valley to provide flood protection to the 1% flood level. The communities were Emerson, Letellier, Dominion City, St. Jean Baptiste, Morris, Rosenort, Brunkild and St. Adolphe. The agreement provided for up to $4.5 million, with the federal government contributing 45% and the provincial government 55%. Manitoba signed agreements with the local governments to contribute up to 5% of the capital costs and 25% of the annual maintenance costs. The local governments agreed to be responsible for all grass mowing in lieu of 25% of the annual maintenance cost, and will also contribute a fixed annual payment to the Province to provide the municipality's share of the costs of replacement of flood pumps in the future.

The agreement was amended on May 22nd 1985 to provide for additional funding of $1.6 million to include flood protection works for Ste. Rose du Lac and the Souris Water Treatment Plant. The title of the agreement was changed to reflect the inclusion of the communities of Ste. Rose du Lac and Souris which are not in the Red River valley. The amended Canada-Manitoba *Agreement Respecting Flood Protection Projects in Manitoba* terminated on March 31st 1989. An amending agreement was signed on January 29th 1990 providing a two-year extension to March 31st 1991 and additional funding of $800,000.

Prior to 1989-1990, dyke upgrading was completed for Letellier, St. Jean Baptiste, Morris, Rosenort and Brunkild. Progress during 1989-1990 for the other communities follow.

Emerson

The construction of the dyke around Noyes, Minnesota and the international boundary dyke on the south side of Emerson were completed. Construction was completed of the section of sheet piling dyke to replace the 120 metres of earthen dyke adjacent to the hospital and senior citizens home which showed failure cracks in 1988.

St. Adolphe

The north dyke closure was finalised after lengthy negotiations with the local government and landowners regarding its location. The results of these negotiations was that the R.M. of Ritchot signed an agreement with the

Province to cover the additional cost of relocating the north closure dyke to include developable land. The work has not been completed and hence the proportioning of the costs among the three parties has not been undertaken. The construction of the dyke closure was initiated in the late fall of 1989, and about 70% of the dyke was completed.

Ste. Rose du Lac
The pumping station and gravity outlet were completed. The only work remaining to be completed under the agreement is some clean-up and seeding.

Souris
The work at the Souris Water Treatment Plant was completed and some adjustments on the dyke were undertaken to improve accessibility for a landowner who uses the dyke as access.

Table WA.8

Expenditure by Sub-appropriation 12-4(f)
(*Canada-Manitoba Flood Damage Reduction Agreement*)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Salaries	50,100	0.00	43,900	6,200
Total Other Expenditures	26,200		88,600	(62,400)[1]

[1] *The 1989-1990 estimate for the* Canada-Manitoba Flood Damage Reduction Agreement *included approximately $55,000 in costs relating to work on the Mapping and Studies Sub-agreements. However, the work was undertaken in-house by staff from the Water Management Section.*

Table WA.9

Summary of Water Control Works, 1989-1990

Program	Region					Total
	Interlake	East / N.E.	S. / East	S. / West	West / N.W.	
Maintenance of Water Supply & Conservation	17,681.16	3,471.89	37,602.86	7,847.72	143,709.99	210,313.62
Flood Damage Reduction	223,034.82	107,119.13	119,670.50	-	75,060.49	524,884.94
Land Drainage	881,631.94	251,604.28	1,199,570.50	16,132.77	709,517.67	3,058,457.16
Waterway Reconstruction	201,091.04	238,257.05	657,327.38	-	113,783.42	1,210,458.89
Bridge Replacement	108,961.69	19,902.84	298,494.70	31,855.81	54,700.38	513,915.42
Washow Bay Agricultural Enhancement Project	400,996.86	-	-	-	-	400,996.86
Pasquia Polder III	-	-	-	-	682,196.95	682,196.95
Flood Protection Projects	-	-	260,947.84	6,029.09	585,083.63	852,060.56
Carman Diversion Project	-	-	1,019,535.40	-	-	1,019,535.40
R.M. and Town of Gimli Flood Protection Project	92,331.85	-	-	-	-	92,331.85
Additional Dyking - R.M. of Richot	-	-	119,716.16	-	-	119,716.16
Cooks Creek Diversion	-	20,675.02	-	-	-	20,675.02
Drought Proofing Projects	-	-	19,023.75	11,228.85	-	30,252.60
Total	1,925,729.36	641,030.21	3,731,889.09	73,094.24	2,364,052.53	8,735,795.43

Section 13

Wildlife Branch

Administration

The Wildlife Branch administered a total budget of $5,270.9 which comprised 78.41 staff years, $3,017.6 in salaries, $2,076.3 for operating and $177.0 capital funds through a financial management system encompassing accounts receivable and payable, quarterly cash flow projections and monthly financial reports, which ensured that spending was maintained within sub-appropriation levels. Total operating and capital budgets were administered 5% under budget allotment.

Comprehensive payroll and personnel services including documentation, staff training and development, performance reviews and adherence to the departmental and branch's Affirmative Action Plan were effectively co-ordinated. Various ongoing administrative support functions for the branch, such as vehicle acquisition and space requirements, were handled as resource availability permitted.

The transfer of two positions to Boissevain is of importance because they will enhance the regional delivery of wildlife programs.

The director represented the branch, the department and the Province on various federal-provincial and inter-agency boards, committees and commissions. These included the Federal, Provincial, Territorial Wildlife Conference; the Prairie Habitat Joint Venture, North American Waterfowl Management Plan; the Mississippi Flyway Council and the Beverly-Kaminuriak Caribou Management Board.

Effective intra- and inter-branch communications were maintained with meetings of senior management teams, and of divisional directors.

Correspondence, information distribution and acknowledgement of public and resource users inquiries were co-ordinated throughout the branch.

Table WI.1

Expenditure by Sub-appropriation 12-9(a) (Administration)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		6.00	228,500	
Main Estimate Authority from General Salary Increase XXV			6,600	
Total Salaries	211,800		235,100	(23,300)
Total Other Expenditures	71,700		41,300	30,400

Management

Recreational Hunting

In 1989-1990 recreational hunting continued to be a popular activity. A total of 57,484 big game hunters harvested approximately 27,000 deer, 1,200 moose, 700 elk, 300 black bears, 90 caribou and 10 timber wolves. In addition, 29,719 residents and 5,273 non-residents took to the fields and marshes to hunt game birds. Non-resident hunters of bear, deer, moose and game birds generated an estimated $3 million in related economic activity in the province.

Some 150,000 hunting brochures, 5,000 brochures on Oak Hammock Marsh and Grants Lake Managed Hunting Areas, 7,000 designated route maps and 3,000 signs were printed and distributed.

Moose, Elk, and Caribou Management

Initiatives in co-operative moose management were continued. Efforts in Game Hunting Area (G.H.A.) 8 were most successful, where moose numbers have more than doubled over the past three years. In G.H.A. 20, however, moose numbers are not recovering as well. The revitalization of moose in this area continues to be a co-operative management challenge for the branch and aboriginal people.

The Elk Management Board established in the Duck Mountain area continued to function. This board is now chaired by a non-governmental individual, and reflects the growing involvement of the public in resource management.

Table WI.2

Hunting Licences Sold, 1989-1990

Type of Licence	Fee $	Number Sold	Revenue[1]
Game Bird			
Resident of Manitoba	9.00	29,719	253,274.50
Non-resident (Canadian)	50.00	782	38,767.00
Non-resident (Non-Canadian)	100.00	4,491	447,053.00
Wild Turkey			
Resident of Manitoba	12.00	0	0.00
Moose			
Resident of Manitoba	33.00	6,160	201,165.50
Non-resident (Canadian)	250.00	2	500.00
Non-resident (Non-Canadian)	300.00	138	41,400.00
Elk			
Resident of Manitoba	33.00	2,664	87,912.00
Woodland Caribou			
Resident of Manitoba	33.00	291	9,601.00
Black Bear			
Resident of Manitoba	15.00	1,604	23,372.00
Non-resident (Canadian)	60.00	6	360.00
Non-resident (Non-Canadian)	115.00	211	24,189.50
Deer			
Resident of Manitoba	20.00	45,697	892,214.00
Non-resident (Canadian)	90.00	341	30,690.00
Non-resident (Non-Canadian)	115.00	298	34,192.50
Total Licence Sales			
Resident of Manitoba		86,135	1,467,539.00
Non-resident (Canadian)		1,131	70,317.00
Non-resident (Non-Canadian)		5,138	546,835.00
Total		92,404	2,084,691.00
Replacement	Variable	222	1,269.00
Wildlife Certificates	8.00	61,724	465,263.50
Grand Totals		154,350	2,551,223.50

[1] *Revenue figures are net (less vendor's commission).*

Note: *In past years the black bear licences were valid for the fall and the following spring seasons. In 1989-1990 the black bear licences were valid for the fall season only. In 1990-1991 the black bear licences will be valid for the spring season and the following fall season. This change also affected the wild turkey licences in that licences for the spring of 1990, which would have been recorded with the 1989-1990 statistics, will now be recorded with those for 1990-1991.*

Table WI.3

Hunting Licences Sales and Revenue, 1980-1981 to 1989-1990

Year	Game Bird		Big Game		Wildlife Certificates		Totals	
	No. Sold	Revenue	No. Sold	Revenue	No. Sold	Revenue	No. Sold	Revenue
1980-1981	58,091	$460,939.75	60,505	$ 666,291.25	83,022	$167,673.00	201,618	$1,294,904.00
1981-1982	56,203	474,355.50	66,570	713,353.25	83,998	169,719.00	206,771	1,357,427.75
1982-1983	51,618	621,183.00	66,711	1,081,211.50	81,225	207,131.50	199,554	1,909,526.00
1983-1984	44,731	697,294.50	64,062	1,134,739.50	75,119	266,116.50	183,912	2,098,150.50
1984-1985	38,826	565,929.00	59,406	1,158,430.00	68,233	309,957.00	166,465	2,034,316.00
1985-1986	35,342	588,487.00	52,541	1,066,958.00	62,607	409,699.00	150,490	2,065,144.00
1986-1987	39,141	691,140.50	53,537	1,101,829.00	64,615	422,833.00	157,293	2,215,802.50
1987-1988	39,381	715,171.50	58,583	1,201,819.50	66,782	503,692.50	164,746	2,420,683.50
1988-1989	37,060	623,428.50	58,795	1,222,661.50	63,995	482,612.50	159,850	2,328,702.50
1989-1990	34,992	739,094.50	57,634	1,346,865.50	61,724	465,263.50	154,350	2,551,223.50

A major project was begun to ascertain the distribution of brainworm in white-tailed deer. Although they seem to be little affected by it, deer transmit this disease which is fatal to moose. Hunters co-operated with the branch and over 800 deer were examined for the presence of brainworm. Samples were analysed by the University of Alberta and the results will show the distribution of this parasite in the province. In 1989, the first record of an elk displaying all the classic symptoms of brainworm was reported in the Duck Mountain area. The autopsy revealed one worm. This was the first confirmed report of this parasite in Manitoba's elk herd.

Joint planning continued with Ontario for the management of the Pen Island caribou herd. This herd of approximately 5,000 animals inhabits the Hudson Bay coastline as far east as Fort Severn, moving towards the Shamattawa area during the winter. Ontario has placed radio collars on approximately 50 caribou, and monitored their movements in co-operation with Manitoba. Management of this herd involves not only the two provinces but also the aboriginal communities as well. Fort Severn and Shamattawa residents in particular have traditionally harvested animals from this population on an annual basis. Aboriginal hunters will be supplying biological samples for use in preparing a management plan.

The fourth year of a five-year study on the relationship between timber harvesting and woodland caribou ecology was successfully completed. Participants were the Wildlife, Parks and Forestry Branches, and Abitibi-Price Inc. Using telemetry, approximately 25 caribou were monitored to determine the annual movement patterns of herds in the Owl Lake – Manigotagan area and Shallow Lake – Upper Bloodvein area. The herds continued a traditional pattern of wintering just east of Lake Winnipeg, and spending the summer close to, or across, the Ontario border. Data on the degree to which caribou use different types of old logging sites was analysed for the final report and management guidelines. All data is being entered in the branch's geographic information system for reporting purposes and for ongoing management and planning.

Black Bear Management

Demand by resident big game hunters for black bear licences has stabilised at approximately 2,700 licences per year, a decrease from a high of 4,061 in 1983-1984. Participation by non-residents continued to increase from less than 200 hunters in 1980 to almost 900 in 1989-1990. The increasing interest in the black bear as a big game animal has led to an increased harvest. This has resulted, at least in part, in a corresponding decrease in the amount of property damage caused by black bears.

The black bear has a low reproductive rate and the major strategy in bear management continues to be ensuring a sustainable harvest through harvest controls. In 1989-1990, a uniform bag limit was implemented throughout the province of one bear per year. In addition, the non-resident harvest was structured throughout the province by a quota system which limits it to a prescribed allocation of licences per game hunting area.

Table WI.4

Wildlife-based Revenues, 1989-1990

Type of Licence	Revenue	
Hunting Licences		
Wildlife Certificates	$ 465,263.50	
Game Bird Licences	739,094.50	
Wild Turkey Licences	00.00	
Black Bear Licences	47,921.50	
Replacement Licences	1,269.00	
Caribou Licences	9,601.00	
Deer Licences	957,096.50	
Elk Licences	87,912.00	
Moose Licences	243,065.50	
Total	$2,551,223.50	2,551,223.50
Commercial Licences		
Trapper Licences	$ 49,840.00	
Fur Dealer Licences	2,575.00	
Tanner Licences	90.00	
Taxidermist Licences	1,950.00	
Shooting Preserve Licences	550.00	
Dog Trainer Licences	810.00	
Game Bird Farm Licences	2,200.00	
Amphibian/Reptile Licences	452.00	
Guide Licences	20,100.00	
Total	$ 78,567.00	78,567.00
Fur Royalties		$ 33,224.00
Miscellaneous Revenue		$ 1,207.36
Total Revenue		$2,664,221.86

Note: *Revenues are based on receipts applicable to licence and fur years rather than to the fiscal year. In past years black bear licences were valid for the fall and the following spring seasons. In 1989-1990 the black bear licences were valid for the fall season only. In 1990-1991 the black bear licences will be valid for the spring season and the following fall season. This change also affected the wild turkey licences in that licences for the spring of 1990, which would have been recorded with the 1989-1990 statistics, will now be recorded with those for 1990-1991.*

In 1989-1990, departmental policy recognised that the value of the black bear as a big game animal would take priority over its secondary use as a furbearer. Harvest of bears by trappers was, therefore, limited by a quota in game hunting areas where current levels of harvest from all sources exceeds the estimated number allowable.

Fires in Game Hunting Areas 14 (Swan / Pelican Lake area) and 21 (Interlake) caused a decline in the number of bears in those areas. Bear hunting is curtailed in the burned areas until the population recovers. Because they have supported high numbers of bear hunters in the past, these areas will be closely monitored to ensure that hunting can be resumed when bear densities increase to normal levels.

Wildlife Damage Control

The department continued to prevent black bear damage to beehives by removing problem bears from the vicinity of bee yards. In addition, 40 grants of $100 each were made available to beekeepers who installed bear-proof electric fences around bee yards.

The Big Game Crop Damage Compensation Program provided financial assistance to farm producers and beekeepers suffering losses caused by big game. Compensation for deer, elk and black bear damage to farm crops amounted to $203,900. Total payments for black bear damage to bee yards was $36,500 for 1989-1990.

Waterfowl

Duck populations remained low during the summer and fall of 1989. Many species were at or near record low levels during the 1990 spring breeding season. Goose populations in the province, however, continued to increase and provide recreational opportunities in spite of the continued drought. Nesting conditions for geese in the northern part of Manitoba and the Northwest Territories continued to be favourable.

The number of waterfowl hunters continued to decline, consistent with a trend that began in 1978. The harvest of ducks in Manitoba decreased in 1989 to 126,000, the lowest on record, while the harvest of geese remained high at 129,000. Due to the low numbers of ducks, hunters are shifting to geese and upland game birds, thus reducing pressure on local duck populations. The outlook for ducks in 1990 continued to be poor while goose populations will likely continue to increase.

Upland Game Birds

Ruffed grouse continued to be abundant throughout their range in Manitoba, although some localised populations showed a decline in numbers. Gray partridge were more numerous in agro-Manitoba, while the wild turkey population remained stable in suitable habitat. Sharp-tailed grouse increased in most areas, but there was continued concern in southwestern Manitoba where fragmentation of habitat and drought conditions have contributed to the decline of this species. The public's concerns about the training of dogs with the use of native upland game birds in the southwest were addressed, and extensive consultations took place with interest groups, trainers and concerned citizens.

The branch began the preparation of a comprehensive Upland Game Bird Management Plan intended to provide better population monitoring and enhancement strategies for all species of upland game birds.

Wildlife Education

Manitoba's 1988 National Wildlife Week program focused on the theme *Conserve Habitat Today for Wildlife Tomorrow*. As part of the youth education program the province's working group organized a poster and prose contest for students in grades three to eight. The 65 winning entrants received prizes of wildlife books, owl posters and gift certificates (donated by Black's Camera) from the Director of Wildlife at an awards ceremony in Winnipeg. Manitoba's working group also produced 20,000 doodle posters partially paid for by a $1,000 grant from Petro Canada, and distributed 3,000 wildlife education booklets produced by the Canadian Wildlife Federation to Manitoba teachers. Wildlife displays involving some 24 exhibitors were set up and staffed during the week in Winnipeg, Portage la Prairie and Brandon. Balloons produced by Alberta's National Wildlife Week Working Group and peregrine falcon mobiles donated by the National Geographic Society were handed out to mall visitors. The Manitoba Forestry Association sponsored a bird house and bird feeder contest as part of its mall exhibit. The week's activities were promoted through radio and television interviews, news releases, newspaper articles and advertisements.

The distinctive character of wildlife management areas continued to appeal to growing numbers of Manitobans and tourists. Oak Hammock Marsh remained the most heavily used area with an annual attendance of 83,000 people. Seasonal naturalists continued to tour schools and special interest groups throughout the area from spring to fall. They also promoted marsh lands through exhibits at shopping malls and fairs during the summer months, and entered a float in the Icelandic Festival parade. Approximately 19,000 people were contacted through off-site displays and 4,400 were taken on tours of the marsh. The Oak Hammock Marsh Information Centre was open to the public seven days a week, from mid May to mid October. Centre staff organized a photography contest and initiated a volunteer program. Branch staff kept area residents apprised of marsh programs and developments through an annual newsletter. Residents' interest in area programs remained high, with farmers participating in the Oak Hammock Marsh Working Group. Hunter education messages continued to be developed and posted in the check stations in the Oak Hammock Managed Hunting Area. Branch staff spent considerable time working on a proposal in conjunction with Ducks Unlimited (Canada) to build a conservation centre at Oak Hammock Marsh.

The Narcisse snake dens continued to attract ever-increasing numbers of visitors. Of the 8,000 people who visited the wildlife management area in 1989-1990, seasonal naturalists took 2,000 students on guided tours of the world renowned snake dens. Fencing and a viewing deck were placed at the middle den to reduce bank erosion and control public access into the den. The installation of decks and fencing around the other dens in the area is planned. Wildlife displays were staffed at some 30 events throughout the year. New exhibits were developed on Manitoba's burrowing owl, peregrine falcon and road allowance programs. A new brochure on the burrowing owl recovery program was produced. Two 30-minute television shows were produced in conjunction with Greater Winnipeg Cablevision on various aspects of resource management and the natural history of the province. Staff also organized a moose biology seminar in conjunction with the Manitoba Big Game Trophy Association.

Throughout the year staff spoke to numerous wildlife associations, naturalists groups, business organizations, service clubs, students and organized youth groups, such as 4-H, Girl Guides and Boy Scouts, on various aspects of wildlife conservation. Staff also took an active role in organizing the Prairie Canada Bird Carving Competition, held in Winnipeg. Branch staff, in conjunction with the Fort Whyte Centre for Environmental Education and various government resource staff, organized a luncheon for M.L.A.'s at the centre where they signed a *Conservation Declaration* to meet the challenge of conserving the province's soil and water resources.

Project WILD

Some 500 educators from across Manitoba were trained in the use of Project WILD materials in 1989-1990. Project WILD is an environmental education program emphasising wildlife sponsored in Canada by the Canadian Wildlife Federation and implemented under agreements with each province's wildlife agency. Participants are required to attend an in-service training workshop, usually conducted jointly by a wildlife specialist and a teacher. With environmental concerns increasingly on the minds of the public, interest in Project WILD has grown considerably.

Promotional brochures were produced in both English and French, and the first Atout Faune workshops were conducted for a total of 44 French language teachers. Atout Faune, the French version of Project WILD, is delivered by the Bureau de l'Education Francaise in co-operation with the Wildlife Branch.

Table WI.5

Expenditure by Sub-appropriation 12-9(b) (Operational Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		11.15	511,500	
Main Estimate Authority from General Salary Increase XXV			15,500	
Total Salaries	521,400		527,000	(5,600)
Other Expenditures Main Estimate			127,900	
Main Estimate Authority from General Salary Increase XXV			200	
Other Expenditures	170,300		128,100	
Grants / Transfer Payments	1,000		1,000	
Total Other Expenditures	171,300		129,100	42,200[1]

[1] *The over-expenditure was due to the emergency clean-up and containment of a significant avian botulism outbreak in southern Manitoba.*

Habitat

Habitat Development

An inter-branch committee of representatives from Forestry, Wildlife, Fisheries, Parks and Regional Services completed a set of guidelines entitled *Forest Management Guidelines for Wildlife in Manitoba*. These guidelines were approved by the department in December 1989.

A new project in forestry and wildlife management was also begun. The project involved an integrated evaluation of forestry operations on wildlife habitat to effectively plan silvicultural prescriptions and wildlife habitat development in Abitibi-Price's forest management licence area.

Habitat enhancement included a co-operative project with the Forestry Branch on the Catfish Creek blow-down salvage area. Other projects were waterhole development in the Brandon Hills Wildlife Management Area, gravel pit rehabilitation in the proposed Mars Hill Wildlife Management Area, re-seeding of burned meadows in the Boggy Creek area of Duck Mountain Provincial Park to produce forage for elk and forage plot development in the Basket Lake Wildlife Management Area.

Wildlife Management Areas

The Wellington Wildlife Management Area, 65 ha in size, was established northwest of Morden in southern Manitoba. It incorporates part of the Shannon Creek and is an excellent deer wintering area.

Additions were made to four existing Wildlife Management Areas in southwestern Manitoba, expanding the Pembina Valley, Portage Sandhills, Tiger Hills and Whitemud

Watershed W.M.A.'s for a total of 1,469 ha. Two wildlife management areas in the Interlake (Broad Valley and Mantagao Lake) were also expanded, by a total 1,068 ha. Some 259 ha were deleted from the Broad Valley W.M.A., however, as part of a land exchange.

A process for preparing fire management plans for various wildlife management areas was developed in 1989-1990. Committees to develop the plans are led by staff from the Wildlife Branch and Regional Services (Fire Management) and include participation by all agencies with an interest in fire management, that is, L.G.D. councils, R.M.'s, Indian Bands *et al.*

Wildlife Land Planning

Wildlife land planning has centred on the development of a Wildlife Management Area Systems Plan, on the Cape Churchill National Park feasibility study, and on implementation of a computerised geographic information system.

A draft systems plan has been prepared that deals with all aspects of wildlife management areas. This plan has province-wide policy implications for wildlife land management. A review of individual plans for wildlife management areas was also begun. This review included assessing current planning status, completeness of data, goals, objectives and policies for each W.M.A. This assessment is designed to ensure that each management area has a current and accurate plan or management guideline document, and that it conforms to overall provincial roles and missions and is consistent with the draft W.M.A. systems plan.

A significant amount of time was spent on the Cape Churchill National Park Feasibility Study. This study was conducted jointly by the Canadian Parks Service, the Manitoba Parks Branch, the Wildlife Branch and the L.G.D. of Churchill. Extensive Wildlife Branch involvement was in order because the study area included the Cape Churchill and Cape Tatnam Wildlife Management Areas. A background report is expected in May 1990, with recommendations to the three levels of government to follow by fall 1990.

In the fall of 1989, the development began of a geographical information system (G.I.S.) for the branch. The G.I.S. is a sophisticated computerised data base, graphic mapping and modelling tool. To date, work has involved set-up, staff training, familiarisation and trouble-shooting. Future projects involving the branch's G.I.S. include the woodland caribou habitat and forest-cutting study on the east side of Lake Winnipeg and the provincial integrated forestry-wildlife management program.

Critical Wildlife Habitat Program

In 1989-1990, the funds previously used for the deer habitat program were recommitted as part of a cost-sharing agreement between Manitoba Natural Resources, Wildlife Habitat Canada, Manitoba Habitat Heritage Corporation, the World Wildlife Fund (Canada) and the Manitoba Naturalists Society. This agreement was signed on July 20th 1989 to preserve Manitoba's remaining critical wildlife habitats, not only for deer but also for other wildlife. The program involves land acquisition, habitat protection leases with landowners and habitat enhancement projects.

During the first year of the program the preservation of Manitoba's tall-grass prairies received priority, since less than one per cent of Manitoba's tall-grass prairie range remains. Two quarter sections of prairie were acquired through the program. Four quarter sections of other upland habitat were also purchased. In addition, leases for endangered species habitat, mainly burrowing owls and ferruginous hawks, secured 247 ha in southwestern Manitoba. Leases for white-tailed deer habitat were signed on 113 ha in the Red River valley and southwestern Manitoba. The lease payment and taxes for the St. Malo Wildlife Management Area were also paid under this program.

Development work under this program included the creation of forage plots in several deer wintering areas and of watering sites in the St. Malo Wildlife Management Area. Several non-game projects were also done under this program. Work was done to establish sand beaches at Long Point for piping plovers. Artificial burrows and nest structures were constructed for burrowing owls, ferruginous hawks and great gray owls.

Allocation and Inventory

Over 300 proposals required under *The Environment Act* were reviewed, along with applications for Crown land leases, permits and sales. The REPAP five-year plan, Phase I mill conversion, Conawapa and Bipole III were also evaluated.

In consultation with other branches, draft policies and procedures were prepared to regulate motorised vehicle use on resource roads and trails on Crown land. These statements are currently being reviewed by other departments and non-government agencies. When

finalised, the policy and procedures will assist in protecting overall resource values and ensuring integrated management of resources.

A joint committee of Manitoba Highways and Wildlife Branches with input from the Fisheries Branch was established to develop guidelines to mitigate new road construction and to set guidelines for highway maintenance and operation. The intent is to have a departmentally approved document in place within a year. The initial focus is on Provincial Roads and Provincial Trunk Highways, but this may be expanded to include resource roads.

Conservation Corridors

This program, with its primary focus on southwestern Manitoba, was initially developed in conjunction with the conservation districts to maintain or restore tree, shrub or grass cover along unused municipal road allowances. Municipal councils implement the program by enacting a right-of-way bylaw stipulating that specified undeveloped road allowances be preserved in their natural state. Prior to 1989-1990, seven municipalities had bylaws in place, but now there are 13 municipalities active in the program.

North American Waterfowl Management Plan

Planning and development continued for the implementation of the North American Waterfowl Management Plan (N.A.W.M.P.) in Manitoba. The implementation plan calls for the expenditure of $134 million in the prairie pothole region of Manitoba, south of Riding Mountain National Park and west of Lake Manitoba. The *Prairie Habitat Joint Venture Agreement* with Saskatchewan Natural Resources, Alberta Natural Resources, Environment Canada, Agriculture Canada, Ducks Unlimited (Canada), Wildlife Habitat Canada, and the North American Wildlife Foundation was approved, thus ensuring a co-operative and co-ordinated approach to program delivery.

The objectives of N.A.W.M.P. are to improve spring breeding duck populations in southern Manitoba to average levels of the 1970's, approximately two million ducks in all, of which 400,000 would be mallards. To achieve this, the plan will effect land-use changes on an estimated 202,500 ha. The program will offer a variety of financial incentives to landowners to modify land use in a manner that will be beneficial not only to wildlife but also to agriculture. Some of the land-use options include maintaining unused nesting cover, planted nesting cover, minimum till, stubble mulch, chemical fallow, green manuring, delayed haying, inter-pothole seeding and rotational grazing.

Manitoba received the first United States funding for the N.A.W.M.P. when $1.1 million was made available. These funds were allocated to acquiring critical waterfowl habitat and to long-term leases. In addition, Environment Canada announced a five-year commitment of funds to the N.A.W.M.P. From this source, $275,000 was expended in Manitoba on land acquisition, seed and equipment for program delivery. To offset the potential negative impact of increased numbers of waterfowl in agro-Manitoba and to ensure acceptability of N.A.W.M.P. in the farming community, the federal and provincial governments stated their intention to enter into financially enhanced five-year programs of Waterfowl Crop Damage Prevention and Compensation.

The Habitat Enhancement and Land Use Program

The Habitat Enhancement Land Use Program (H.E.L.P.) is entering its fourth year of activity. It is a co-operative effort by Wildlife Habitat Canada, Ducks Unlimited (Canada) and Manitoba Natural Resources to address the problems of habitat loss for waterfowl and other wildlife. This pilot project under the N.A.W.M.P. is testing various techniques to save habitat on private lands.

By using a variety of incentives this program has protected some 3,130 ha of wetland wildlife habitat under long-term leases with 70 landowners. The program will reach its goal of 3,600 ha by fall 1990. Two pasture management projects have been developed with co-operating landowners, 259 ha of land were purchased and are being developed as nesting cover, and an electrified predator-proof fence has been installed across a peninsula on the west side of Shoal lake as an experiment in intensive waterfowl production.

Program evaluation is continuing through nest success studies on some 600 ha of habitat, and a socioeconomic study was initiated by a student of the Natural Resources Institute.

Public relations activities during the past year were highlighted by a landowner appreciation banquet in October 1989 to formally recognise the farm families that are with the program. Staff hosted a number of tours through the project area including a group of officials from the U.S. Congress who will be instrumental in expediting American funding for the N.A.W.M.P. in the future. Exhibits and displays at local and provincial fairs and

press releases, interviews and presentations to various groups all helped to promote the project. Staff have met on an ongoing basis with a local advisory committee, a technical committee, local municipal officials, and other groups to co-ordinate the activities of H.E.L.P.

The project is achieving its objective of devising and demonstrating innovative and effective means of habitat preservation and development on private lands.

The Heritage Marsh Program

The Manitoba Heritage Marsh Program is a co-operative agreement to protect significant areas of wetland habitat for all Manitobans. To date, seven well-known marshes have been designated as Heritage Marshes. Five of these have intensive water-control works and some of the surrounding land is managed as nesting cover to maximise waterfowl production. Management activity is underway at the two most recently designated areas, Delta and Lidcliff Marshes. Two development plans being implemented at Delta are the Lake Francis project and the Lynch Point project, which together will provide 2,290 ha of improved habitat for waterfowl in the Delta Marsh.

Ducks Unlimited (Canada) has maintained an active program in Manitoba. The largest project begun in 1989 was the 1,300-ha Whitewater Lake project near Boissevain. For the past two years the larger portion of Whitewater Lake has been dry. This project will capture the water in a smaller portion of the basin to provide wetland habitat for waterfowl and an improved hay source for the livestock industry. Other projects of this organization that involve Crown lands have added 750 ha of wetland and upland nesting habitat to the wetland base devoted to waterfowl management in Manitoba.

Facility Enhancement

The capital budget was dedicated to various maintenance and construction projects on various wildlife facilities, including the internationally known Narcisse snake dens. A viewing platform was constructed at the south den site and landscaping was completed, including reinforcement of the den site with limestone rock. Guard rails were installed and landscaping was completed at the middle den viewing platform.

An enclosure was built to protect the helicopter used for goose research work at Churchill from polar bears. Departmental field stations at Delta Marsh, Chatfield and Clandeboye were also repaired and maintained.

Informational and interpretative signs were installed at several Wildlife Management Areas. Interpretative signs identifying waterfowl nesting cover and lure crops were erected at the Grant's Lake Wildlife Management Area. Signs intended to deter people from causing grass fires were erected at the Westlake Wildlife Management Area. Also, a trailhead sign was developed for the self-guiding trail in the Thalberg Bush Wildlife Management Area.

The *Wildlife Management Area* brochure was updated and reprinted, and maps were produced for 10 additional information sheets for the *Wildlife Management Area Field Guide*.

Funding was provided for regular maintenance and operation of Oak Hammock Marsh Wildlife Management Area, including the information centre. The Oak Hammock Managed Hunting Area check station was operated again, and approximately 6,000 Canada geese and 3,000 snow geese were harvested in the managed hunting area. These numbers are up slightly from the 1988 figures.

Weed control and nesting cover enhancement were undertaken in the Oak Hammock Wildlife Management Area and also in the Netley Libau area.

Table WI.6

Expenditure by Sub-appropriation 12-9(c) (Habitat Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		10.00	391,100	
Main Estimate Authority from General salary Increase XXV			18,500	
Total Salaries	401,700		409,600	(7,900)
Other Expenditures Main Estimate			424,300	
Main Estimate Authority from General Salary Increase XXV			1,000	
Total Other Expenditures	401,600		425,300	(23,700)

Biological Services

The Biological Services Section is responsible for obtaining biological information on wildlife species and their habitats, particularly on those species in high demand, for developing and refining management programs.

In 1989-1990, over 10,000 questionnaires on big game were sent to an estimated 50,000 hunters with return rates from 54% to 100%. Results covered 45 season/species.

Questionnaires were also used to determine population abundance and trends for the major furbearer species. A poor rate of return was experienced compared to 1988-1989. This was expected with low trapper activity levels due to depressed fur market values. Returns from 283 trappers, of whom 249 had acceptable data, covered 11% of the Registered Trapline (R.T.L.) trappers. Of the 44 R.T.L. sections, 25 (57%) were covered, which represented 192 of the 876 individual traplines (22%). All species showed good population levels with hare and lynx increasing in eastern and western R.T.L. sections, red fox increasing in southern and western R.T.L. sections, and coyote increasing in western R.T.L. sections. The remaining species have exhibited no changes in their populations.

Considering the low activity levels and stability of fur populations, the questionnaire will now be conducted every second year. Therefore, the next questionnaire will be in 1991-1992 and be of a more comprehensive nature for use in a comparative trapper profile study.

During the 1989-1990 season, 882 furbearer carcasses (mostly marten, fisher, lynx and wolf) were analysed. Excellent age/sex ratios existed for the species and areas sampled. Most specimens came from the Duck Mountains and the Northwestern Region where access and contributor motivation were best. Approximately 150 trappers contributed specimens.

Of 433 lynx pelts tagged, only 94 carcasses were received for analysis (22% of the reported harvest). The carcass return has declined from 40% in 1986-1987. Reduced lynx age/sex data contributed to difficulties in assigning appropriate quotas for R.T.L. districts and sections. From the specimens received it appears that northern areas are now in the early stages of the decline phase of the population cycle, while the area east of Lake Winnipeg is in the increasing phase. The intent is to maintain sufficient population of lynx through the upcoming low point in the cycle to ensure adequate breeding stock into the next peak.

The monitoring program was divided into five sub-programs: jaws, bear/fire, big game surveys, deer co-operator, and equipment.

Participation by hunters in the jaw and female reproductive tract program declined approximately 17% from the previous year. These are some of the data used to determine population trends. Even with this unexplained decline, the branch received over 50% of the legal harvest: one of the highest rates of return in North America. The collection of bear incisors and reproductive tracts was officially included in this program in 1989-1990. The 25% participation rate is considered good for an initial response.

With demands for black bear hunting increasing and numerous fires destroying large tracts of habitat in the spring of 1989, an assessment was needed to determine what impact these fires would have on the movements and densities of black bears. Two areas were selected to evaluate this impact: the Hodgson burn and the Swan / Pelican burn. A bear scent station survey was chosen as the technique to determine bear activities inside and outside these burn areas. This year the mechanics of the technique were tested to determine a set of standards and to get a preliminary indication of what the movement patterns were. In general, bears were virtually absent in the burn areas but there was some activity outside. A systematic survey was scheduled for spring 1990 to evaluate whether this technique can be used to successfully monitor black bears in these areas.

Areas requiring population estimates of big game based on criteria set out by the species managers were selected. Aerial surveys were flown in G.H.A.'s 2A, 5, 7, 14, 19B, 20, 25 and 29A to obtain these estimates as well as age/sex breakdowns. As a direct consequence of recommendations from a December 1989 meeting that reviewed the branch's monitoring program, the section's statistical analyst introduced a more reliable technique for determining population estimates. This technique will be applied to all future aerial surveys.

The deer co-operator program was a four-year pilot study begun in 1987 to determine whether observations of deer made by volunteers could be used to extrapolate population trends and densities. Data is continuing to be collected, and a preliminary analysis will be available at the 1991 monitoring allocation meeting.

Piping Plover

A census of the three main Manitoba breeding areas for piping plovers and several additional areas was conducted again in 1989. A slide presentation on piping plovers was given to the Grand Rapids Commercial Fishermen's Association. Telephone contacts were made and letters were sent to the Grand Rapids Town Council, the Mayor, the Fur Council, the Commercial Fishermen's Association and the Indian Band Office. These groups were encouraged to submit an application to the provincial government to have the Long Point sand spit breeding area established as a Wildlife Sanctuary in honour of a recently deceased Grand Rapids resident, Walter Cook.

Ownership of the land used by nesting piping plovers at West Shoal Lake was determined, but low water-levels made habitat enhancement there nearly impossible in 1989. The Canadian Piping Plover Recovery Team visited the area in September, and elsewhere regional enforcement staff are taking an increased interest in protecting plover beaches from all-terrain vehicles.

Efforts to find unrecorded nesting areas along the west side of Lake Winnipeg revealed only one bird there. That aspect of the project was hampered by high winds, problems with equipment and the fact that local commercial fishermen were busy with summer fishing.

Great Gray Owl

A majority of radio-marked great gray owls from southern Manitoba relocated some 300-800 km north and northeast of their traditional locales during the fall and winter of 1988-1989. Those few radio-marked birds remaining in southeastern Manitoba and adjacent Ontario either starved or succumbed to predation. These phenomena coincided with decreased small mammal populations as revealed by ongoing snap-trap surveys. To ensure that the emigration pattern truly repeated the one observed in 1984-1985, extensive areas were searched by aircraft in all directions from southeastern Manitoba (nearly 200 hours). Over the last two years as many as 16 radio-marked great gray owls emigrated northward. Radio contact was maintained with eight of these birds up to this year's breeding season. The bird which had emigrated the furthest was found nesting on the ground near Gillam, Manitoba.

Despite a considerable effort, only 13 owls (seven adult females, five adult males and one immature female) were trapped this past winter. One female proved to be banded and was at least nine years old. In April and May of 1989, 142 known nest structures were checked for breeding owls. Of these, one was occupied by great gray owls. Twenty-one volunteers assisted with the great gray owl display during National Wildlife Week. Many thousands of people enjoyed seeing a live owl. About $2,500 was obtained for owl research through donations and the sale of photographs, posters and buttons. Elementary school children at four schools raised another $2,063 for owl research. There were four other presentations with the owl.

Peregrine Falcon

A pair of banded peregrine falcons nested successfully in a box near the roof of the 30-story Delta Winnipeg Hotel, fledging four young July 14th–16th. One of the young was later found dead in a nearby smokestack. The adult pair had been present in Winnipeg throughout the summer of

1988, but each was with an unbanded adult male. However, in late summer both unbanded birds unaccountably disappeared and the banded birds formed a new pair. The male of this nesting pair was released in Winnipeg in 1986; the female hatched in the wild in Minneapolis in 1987. The nesting success received extensive media coverage and was viewed by hundreds on closed-circuit television in the hotel lobby. Five young falcons from the Wainwright breeding facility were released on August 2nd, bringing the total released in Winnipeg since 1981 to 38.

Threatened and Endangered Grassland Birds

Conservation efforts to maintain populations of threatened and endangered grassland birds in Manitoba continued in 1989 with the support of Manitoba Natural Resources, the Manitoba Naturalists Society, Manitoba Lotteries Special Conservation Fund, Manitoba Habitat Heritage Corporation, World Wildlife Fund Canada, Environment Canada and the Canadian National Sportsmen's Show.

Field surveys revealed 34 nesting pairs of burrowing owls, 35 nesting pairs of ferruginous hawks, 261 pairs of loggerhead shrikes, and 218 Baird's sparrows' nesting localities (321 singing adults). The apparent stability in burrowing owl and loggerhead shrike populations was attributed to increased surveying efforts, improved knowledge of how and where to locate these birds, and heightened public awareness resulting in more reports. Although six more burrowing owl pairs were found than in 1988, minimal reuse of historic nesting sites, low return rates of banded juveniles and few non-breeding records suggest that burrowing owl populations in the province are continuing to decline. Loggerhead shrikes remain restricted to the extreme southwest. However, even here it is estimated that populations have declined by 40%-50% since 1987. Nevertheless, extremely dry conditions in the southwest continue to benefit ferruginous hawks and Baird's sparrows.

Conservation efforts to maintain existing populations and critical habitat include public education and landowner awareness programs, habitat assessment and land leases, preparation of national and provincial recovery plans, monitoring of remaining populations, assessing limiting factors and productivity, banding and colour-marking, burrowing owl reintroductions, and installation of nesting structures and artificial nest burrows. Heightened public awareness through local involvement, personal contacts, media releases, mailouts and handouts are instrumental to the success of the recovery efforts. Land leases of critical sites continue and alternative strategies to manage and conserve more extensive grassland areas are being explored. National recovery plans are being prepared and will be followed by provincial recovery plans. Survey techniques are being refined, yielding better information on the status of remaining populations. Productivity during most years appears adequate, but low rates of natal fidelity suggest that post-fledging losses require additional attention. In addition to banding and colour-marking juveniles of all four species, adult burrowing owls were banded and colour-marked to better assess migration routes, wintering range, survival and return rates. To stimulate reports and national/international interest, notices were published in several ornithological journals and several biologists were contacted directly. Burrowing owls were again obtained from Saskatchewan and reintroduced into extensive pastureland in southwestern Manitoba. Additional nesting structures for ferruginous hawks and artificial nesting burrows for burrowing owls were installed or repaired.

Small Mammal Research

Long-range monitoring of snowshoe hare and small mammal populations at Long Point continued in September. The number of hares was the lowest since 1981 and indicated the low part of the ten-year cycle.

Co-operative Studies

Co-operative studies with the Canadian Wildlife Service continued on double-crested cormorants in Lake Winnipegosis. Thirty-eight colonies were surveyed and 35,000 breeding pairs were found. High numbers of young birds with twisted bills, a genetic defect, were noted.

Two young bald eagles turned over to department staff during the summer were sent to New Jersey to further their efforts to restore bald eagle populations in that part of North America.

The University of Manitoba received a $12,000 grant to continue research on six projects in support of solving wildlife management concerns. These projects included a study of alternatives to current logging and reforestation practices which will increase benefits to wildlife, an assessment of moose browse production and use on Hecla Island, an evaluation of the vegetation and animal response to bulldozed and prescribed burn areas for elk habitat enhancement, a study of the importance of bank dwellings used by beaver and energy values of winter food caches for this species, and an assessment of the impact of cowbirds on several species of songbirds that are declining in the Delta Beach Ridge area. The first three

studies have been completed with recommendations made to the branch to consider refined management efforts. The last three studies will be completed next year.

Co-operative studies were conducted in several areas of the endangered species program, and with the Canada goose research project at Churchill with external funding serving as a major source of financial support. Such funding came from several state wildlife agencies in the Mississippi Flyway, The Endangered Species Recovery Fund, and the World Wildlife Fund of Canada, among others.

The final year of a three-year co-operative study of black bears in the area of Riding Mountain National Park was completed. The Wildlife Branch and the Canadian Parks Service have supported this project, contributing approximately equal funding. A primary objective of the study was to determine the degree to which black bears moved in and out of the national park, and their vulnerability to hunting. Both jurisdictions supported the overall management objectives for black bears in the area, namely, to maintain a bear population for viewing in the park, to maintain hunting opportunities around the park, and to control the population sufficiently to maintain agricultural damage at an acceptable level. Using telemetry, approximately 30 bears were monitored at any one time. It was found that the park was an essential denning area, regardless of whether bears spent most of the summer in or out of the park. Movement patterns are being plotted in relationship to areas of intensive recreational use, hunting baits, honey operations, dumps and agricultural crops, to allow management plans to take all these factors into account. A final report, with management recommendations, is in preparation.

Analytical Services

The 1988-1989 interim report for trapline allocation was distributed at the end of July 1989 on schedule. Though data entry difficulties were experienced during the remainder of the fiscal year, the final annual report was distributed by the end of January 1990 on schedule. By the end of March 1990, 8,050 trappers were on file, a reduction of approximately 20% from the previous year. A similar reduction in fur harvest is expected, generally due to low fur values but, specifically in some areas, due to extensive forest fires in 1989.

Specific analytical services provided included installation and consultation on the new Geographic Information System. The *Big Game Hunter Questionnaire* was converted from dBase to *Paradox*. The deer co-operators data base system was transferred to the southwestern regional office for ongoing use and data input. A wildlife population model for use on IBM computers was also begun. Presentations on the statistical requirements for big game surveys were given during a major branch review of wildlife monitoring systems. Big game aerial surveys were designed for G.H.A.'s 2A, 5 and 7A. Consultation was also provided on implementing new techniques to monitor black bear populations.

Table WI.7

Expenditure by Sub-appropriation 12-9(d) (Biological Services)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		12.00	457,000	
Main Estimate Authority from General Salary Increase XXV			17,500	
Total Salaries	456,400		474,500	(18,100)
Other Expenditures Main Estimate			167,300	
Main Estimate Authority from General Salary Increase XXV			1,000	
Other Expenditures	161,100			
Grants / Transfer Payments	12,000		12,000	
Total Other Expenditures	173,100		180,000	(7,200)

Regional Management

Regional management involves support for regional wildlife staff to ensure effective wildlife policy and program implementation throughout the province. Regional wildlife staff deliver programs in the field that include wildlife habitat preservation and management and wildlife population surveys.

Regional program delivery was further enhanced with the transfer of two branch staff to a sub-regional office in Boissevain in the fall of 1989.

A new management and allocation agreement for moose in northwestern Manitoba was signed in March 1990 by the Game Hunting Area 8 Moose Management Committee. This agreement extended the moose hunting closure and developed a harvest strategy to be implemented between September 1990 and August 1991. Fifty hectares of over-mature moose habitat were cleared during February in a continuing effort to enhance habitat and increase the numbers of moose in G.H.A. 8. The project cost of $10,000 was covered by the department's Special Conservation Fund.

Big game surveys for moose and woodland caribou were completed in G.H.A.'s 2A, 5, 7 and 7A. The surveys indicated fewer moose and woodland caribou.

A fire management plan was completed for the Saskeram W.M.A. and information on current and historic wildlife resources of the Saskatchewan River Delta was provided to consultants and interest groups concerned with the Grand Rapids Hydro Project compensation negotiations.

The exploration of co-management opportunities and assistance to aboriginal people increased significantly in the Interlake. Improved working relationships were developed with the Dog Creek, Peguis and Brokenhead Indian Reserves. Work on the Waterhen wood bison project continued in co-operation with the Waterhen Indian Band. Thirty-two bison were culled for community use and five were sold. Approximately 237 ha were cleared at the site to improve its value to bison.

Although the departmental role in the Skownan Moose Management Board is now largely advisory, the system is working well as it allows for greater participation by local residents. The project's objectives are now being achieved. Domestic harvest dropped this past year from a high of 56 animals to fewer than 20. Some of the hunters who are responsible for this harvest are beginning to attend the meetings and become active participants. Jaws are being turned in for the first time in five years to allow for biological data collection on harvested animals.

Table WI.8

Expenditure by Sub-appropriation 12-9(e) (Regional Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		15.00	589,600	
Main Estimate Authority from General Salary Increase XXV			19,500	
Total Salaries	633,900		609,100	24,800
Other Expenditures Main Estimate			178,200	
Main Estimate Authority from General Salary Increase XXV			1,200	
Total Other Expenditures	192,300		179,400	12,900

Northern Development Agreement – Provincial Wildlife Management

This source of funding provides for communication with local residents in northern Manitoba on wildlife use and habitat management, the Polar Bear Alert Program, resource development, barren-ground caribou management, *Northern Flood Agreement*, Wildlife Management Area development and co-operative projects with Treaty Indians.

Considerable time was spent on the Repap review process for the *Five Year Forest Management Plan*, including branch and R.P.C. meetings and review of proposed activities for each F.M.U.

Work continued with the inter-jurisdictional Caribou Management Board and the communities of Lac Brochet, Tadoule Lake and Brochet on programs related to caribou management. Fire maps were completed for the barren-ground caribou winter range as part of a co-operative "Values-at-Risk" study being undertaken with the Northwest Territories and Saskatchewan under the auspices of the Caribou Management Board. Two winter distribution surveys showed caribou to be confined primarily to the northwestern corner of the province and in fewer numbers than in previous years.

Little progress was made on moose management plans in Northern Flood Agreement communities because of the failure of the Wildlife Advisory and Planning Board to develop an acceptable joint wildlife management agreement.

Work continued on the Churchill Polar Bear Alert Program in conjunction with Regional Services staff. A report on polar bears at Churchill was presented to the Federal/Provincial/Territorial Polar Bear Technical Committee meeting. Denning surveys were flown in March in the area south of the Cape Tatnum Wildlife Management Area. Also, financial assistance was provided to the Canadian Wildlife Service research study on the population dynamics of polar bears in Zone A1.

Table WI.9

Expenditure by Sub-appropriation 12-9(f) (*Northern Development Agreement* – Provincial – Wildlife Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		3.00	134,700	
Main Estimate Authority from General Salary Increase XXV			3,100	
Total Salaries	135,900		137,800	(1,900)
Other Expenditures Main Estimate			107,900	
Main Estimate Authority from General Salary Increase XXV			600	
Other Expenditures	83,300			
Grants / Transfer Payments	15,000		15,000	
Total Other Expenditures	98,300		123,500	(25,200)

Fur Management

Manitoba trappers harvested $1.5 million worth of fur in 1989-1990, a $1 million decrease from last year. This decrease was attributed to a number of factors including an oversupply of pelts because of last year's carry-overs; a drop in prices; poor demand for coyotes, foxes and raccoons; and a reduced supply of muskrats due to drought conditions. It is believed that the supply-side imbalance will resolve itself over the next year, and raw fur prices will return to significantly higher levels. Low pelt prices severely affected the spring harvest of beaver and muskrat because it was uneconomical to trap them. Most furbearer populations have increased to a level where they are becoming a nuisance. Mange was reported in several coyotes taken from the Southwestern and Western Regions but has not had a major impact on the population.

Trapper education staff conducted 10 fur schools involving 200 trappers. The number of fur schools and participants was down considerably due to lack of interest in trapping as a result of poor fur prices. Public awareness presentations were provided to 11,716 students in 125 schools. Trapline officers conducted courses on humane trapping and fur conservation in several northern communities. Four training sessions were held at the Wallace Lake Experimental Trapline. Participants included native youths, natural resource officers and members of the Canadian Armed Forces. Natural resource students from Keewatin Community College in The Pas and resource students from the Frontier Collegiate in Cranberry Portage participated in courses at Tramping Lake .

The Fur Program, cost-shared with the Federal Department of Indian Affairs, continued to provide financial and staff resources to the Fur Institute of Canada and assisted the Manitoba Trappers Association with a grant of $60,000.

Table WI.10

Fur Statistics for the Year Ending 31st August 1990

Species	Quantity	Average Price	Value	% of Total Value	Royalty per Pelt	Royalty
Badger	55	$ 13.00	$715	0.1	$ 0.50	$ 28
Bear	823	87.00	71,601	4.6	1.00	823
Beaver	15,868	17.40	276,103	17.7	0.50	7,934
Coyote	2,431	19.00	46,189	3.0	1.00	2,431
Ermine	2,462	2.20	5,416	0.4	0.05	123
Fisher	1,454	60.00	87,240	5.6	1.50	2,181
Fox, Blue	3	11.00	33	0.0	0.50	2
Fox, Cross	208	21.50	4,472	0.3	0.50	104
Fox, Red	3,247	9.50	30,847	2.0	0.50	1,624
Fox, Silver	50	17.00	850	0.1	0.50	25
Fox, White	482	11.00	5,302	0.3	0.50	241
Lynx	446	131.00	58,426	3.7	5.00	2,230
Marten	6,991	69.00	482,379	30.9	1.00	6,991
Mink	11,922	34.00	405,348	25.9	0.50	5,961
Muskrat	13,103	1.70	22,275	1.4	0.05	655
Otter	1,265	26.00	32,890	2.1	0.75	949
Raccoon	696	6.75	4,698	0.3	0.50	348
Squirrel	6,343	0.75	4,757	0.3	0.05	317
Wolf, Timber	181	101.00	18,281	1.2	1.00	181
Wolverine	31	193.00	5,983	0.4	2.50	78
Total			$1,563,805			$ 33,224

Table WI.11

Open Area and Registered Trappers and Estimated Value of Wild Fur Production

Year	Open Area Licences Sold	Registered Trapline Permits Sold	Production Value
1980-1981	13,327	3,425	$ 8,240,619
1981-1982	13,072	3,187	5,564,491
1982-1983	13,938	3,110	4,313,572
1983-1984	12,110	2,927	3,783,562
1984-1985	12,917	2,974	4,764,525
1985-1986	11,926	2,917	5,061,209
1986-1987	12,302	2,745	8,070,118
1987-1988	11,730	2,993	5,393,731
1988-1989	7,692	2,498	2,259,416
1989-1990	6,447	2,219	1,563,805

Note: *In 1981-1982 the departmental fur year was changed to the 12-month period ending August 31st. The information for 1980-1981 is based on the 12-month period ending September 30th.*

Table WI.12

Expenditure by Sub-appropriation 12-9(g) (Fur Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		12.26	445,500	
Main Estimate Authority from General Salary Increase XXV			20,000	
Total Salaries	442,700		465,500	(22,800)
Other Expenditures Main Estimate			342,900	
Main Estimate Authority from General Salary Increase XXV			600	
Other Expenditures	274,800			
Grants / Transfer Payments	75,400		75,400	
Total Other Expenditures	350,200		418,900	(68,700)

Canada-Manitoba Waterfowl Damage Agreement

Due to the dry summer and fall for much of the province, crop damage by waterfowl (including geese, ducks and sandhill cranes) was greatly reduced. The Waterfowl Crop Damage Prevention Program's costs of $372,888 were shared equally by the provincial and federal governments.

The program operated two feeding stations, 12 Crown land lure crops (1,949 ha) and purchased three private land lure crops (553 ha) to feed waterfowl in damage prone areas. Program staff also assisted farmers in scaring waterfowl from unharvested crops.

Table WI.13

Expenditure by Sub-appropriation 12-9(h) (*Canada-Manitoba Waterfowl Damage Agreement*)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Other Expenditures Main Estimate			327,800	
Main Estimate Authority from General Salary Increase XXV			1,200	
Total Other Expenses	293,200		329,000	(35,800)

Commercial Wildlife Management

Wildlife Allocation to Non-resident Sport Hunting Commercial Operations

The Non-resident Black Bear Allocation Program, under which non-resident (non-Canadian) black bear licences are allocated with operating areas to lodge owners and outfitters was functional in all or portions of five regions in 1989-1990. The objectives of the program were to regulate the non-resident harvest of black bears, and maximise both the use of available resources and the economic return to the people of Manitoba. Approximately 1,300 licences were allocated to 110 operators. It is estimated that the non-resident black bear hunt will generate over $2.25 million in rural Manitoba.

The 1988-1989 Non-Resident Moose Allocation Program, designed to allocate non-resident (non-Canadian) moose licences and areas of operation to lodge owners and outfitters, co-ordinated the distribution of 138 licences, a modest increase over the 1987-1988 sales figure of 92. Potential for increased licence sales to non-residents is severely limited by the lack of resources in many areas and priority commitments to subsistence and resident sport hunters.

Wood Bison Management

Wood bison were introduced to Manitoba's Waterhen district in 1984 in co-operation with the Waterhen First Nation, formerly known as the Waterhen Indian Band. The project was multiple-agency funded, largely under the auspices of the *Northern Development Agreement* and Indian Affairs Canada.

Poor calving, reported previously, has been rectified and the sex ratio of the herd has been restructured. Plans are being made to establish a wild herd in 1991. Commercial development of the captive herd continues, and economic self-sufficiency is nearing realisation.

Co-management

Co-management initiatives were developed as a means to resolve resource management concerns involving aboriginal people. The success achieved at Waterhen in moose and wood bison management, at The Pas in moose management, and the Barren-ground Caribou Program support the potential of co-management. Plans were developed for a province-wide initiative in 1990-1991.

Table WI.14

Expenditure by Sub-appropriation 12–9(j) (Commercial Wildlife Management)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Salaries				
Main Estimate		9.00	259,700	
Main Estimate Authority from General Salary Increase XXV			6,000	
Total Salaries	179,000		265,700	(86,700)
Other Expenditures Main Estimate			251,300	
Main Estimate Authority from General Salary Increase XXV			2,000	
Other Expenditures	425,800			
Grants / Transfer Payments	100		4,000	
Total Other Expenditures	425,900		257,300	168,600[1]

[1] *Due to the delay in full-time staff recruitment, additional short-term staff were hired from the other expenditure account with funding of $72,200 being transferred to this component from the Fur Management component to reflect changes to the expenditure schedule under the Canada - Manitoba Indian Wildlife Management Contribution Arrangement agreement. There was also an increased number of compensation claims for damage to crops by big game.*

Commissions, Corporations, Grants and Projects

Venture Manitoba Tours Ltd.

The objective is to provide funding to allow the Province of Manitoba, the sole shareholder of Venture Manitoba Tours Ltd., to recognise a reduction in the value of its holding in Venture Manitoba Tours Ltd. by the loss projected by the corporation in the fiscal year; and the provision for the payment of interest on a capital improvement loan.

Table AF.1

Expenditure by Sub-appropriation 12-1(j) (Venture Manitoba Tours Ltd.)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Salaries	000	0	000	
Other Expenditures	000	0	000	
Grants / Transfer Payments	106,800		50,000	
Total Other Expenditures	106,800		50,000	56,800[1]

[1] *The corporation had predicted a loss of $50,000 in 1989-1990. However, low occupancy at the Gull Harbour Resort and Convention Centre due to renovations undertaken during December resulted in an actual loss of $90,000. Additionally, the department was required to pay $16,800 of interest on an interest-free loan provided to the corporation for renovations.*

Manitoba Water Commisssion

The Manitoba Water Commission was established for the purpose of conducting evaluations of major water-related projects referred to it by the minister. The commission was inactive during the 1989-1990 fiscal year.

Total approved funding for this program, which includes both the Manitoba Water Commission and the various strategies under the Land and Water Strategy, was $173.4. Total expenditures for the program were $139.5. This underexpenditure of $33.9 is composed of $23.0 unexpended by the Water Commission because it did not operate in 1989-1990, and $10.9 unexpended in the Land and Water Strategy because they did not proceed as far as had been expected when funding requirements were submitted.

Table AF.2

Expenditure by Sub-appropriation 12-11(a) (Manitoba Water Commission)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Other Expenditures	139,500		173,400	(33,900)

Boundary Waters

Boundary Waters monitors the development of international and inter-provincial water projects such as the Garrison Diversion Unit in North Dakota, the Rafferty-Alameda project in Saskatchewan and other transboundary water developments.

Table AF.3

Expenditure by Sub-appropriation 12-11(b) (Garrison Diversion Opposition)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Other Expenditures	28,600		25,000	3,600

Habitat Enhancement Fund

In 1989-1990 the Habitat Enhancement Fund provided a grant to the Manitoba Habitat Heritage Corporation for the protection of wildlife and fisheries habitats through land acquisition, habitat protection agreements (leases) and habitat development projects. Specific Habitat Heritage projects were approved by a board of directors of the corporation. Appointment to the board is by the Lieutenant Governor in Council.

Table AF.4

Expenditure by Sub-appropriation 12-11(c) (Habitat Enhancement Fund)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Other Expenditures	0		0	
Grants / Transfer Payments	200,000		200,000	
Total Other Expenditures	200,000		200,000	0

Natural Resources Institute Grant

The objective is to provide a grant to the Natural Resources Institute, University of Manitoba, in support of student research projects related to the management, allocation and protection of natural resources.

Table AF.5

Expenditure by Sub-appropriation 12-11(d) (Natural Resources Institute Grant)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Other Expenditures	0		0	
Grants / Transfer Payments	20,000		20,000	
Total Other Expenditures	20,000		20,000	0

Sustainable Development

The Manitoba government has adopted sustainable development as a central part of its economic and environmental agenda. It is committed to building a future based on economic development in harmony with our environment. The sub-appropriation for sustainable development supports the development of communications, programs and strategies to move Manitobans towards sustainable development.

Table AF.6

Expenditure by Sub-appropriation 12-11(e) (Sustainable Development)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Other Expenditures	185,600		190,000	(4,400)

Acquisition/Construction of Physical Assets: Northern Development Agreement – Provincial

The objective is to provide funding for the construction and upgrading of Provincial Park facilities in the northern area of the province to provide a system of park lands for use and enjoyment of Manitobans and visitors to the province.

Table AF.7

Expenditure by Sub-appropriation 12-12(a) (Acquisition/Construction of Physical Assets: Northern Development Agreement - Provincial)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Total Other Expenditures	214,800		242,500	(27,700)

Acquisition/Construction of Physical Assets: Other Capital Projects

The objectives are to provide funding for the construction and upgrading of park facilities, bridges, waterways, dams and flood-control works for the benefit of Manitobans; to purchase equipment and land required by the department for programs and construction works; and to develop recreational lots for the use and enjoyment of Manitobans.

Table AF.8

Expenditure by Sub-appropriation 12-12(b) (Acquisition/Construction of Physical Assets: Other Capital Projects)

	Actual 1989-1990	SY	Estimate 1989-1990	Variance $ Over (Under)
Other Expenditures Main Estimate			7,429,900	
Main Estimate Authority from Enabling Vote XXVI			1,278,000	
Total Other Expenditures	7,920,300		8,707,900	(787,600)[1]

[1] *The majority of the underexpenditure was due to problems encountered with acquisition of the right-of-way for the Gimli Diversion Project. An amount of $730,000 allocated for this project was not fully expended.*

Revenue and Expenditure Summaries

Table AF.9

Summary of Revenue by Source, for the Year Ending March 31st 1990

Actual 1988-1989	Actual 1989-1990	Increase (Decrease)	Source	1989-1990 Actual	1989-1990 Estimate	Variance
			Current Operating Programs			
0.0	0.0	0.0	Taxation	0.0	0.0	0.0
			Other Revenue			
1,945.5	1,875.7	(69.8)	(a) Fisheries	1,875.7	1,950.5	(74.8)
3,494.7	2,913.9	(580.8)	(b) Forestry	2,913.9	2,722.1	191.8[1]
463.3	480.5	17.2	(c) Lands	480.5	476.2	4.3
84.4	35.5	(48.9)	(d) Municipalities Shared Cost Receipts	35.5	25.0	10.5[2]
5,658.7	5,627.8	(30.9)	(e) Parks	5,627.8	6,144.8	(517.0)[3]
24,215.3	29,183.7	4,968.4	(f) Water Resources	29,183.7	30,939.9	(1,756.2)[4]
2,514.0	2,753.1	239.1	(g) Wildlife	2,753.1	2,912.4	(159.3)[5]
1,124.0	1,271.7	147.7	(h) Sundry	1,271.7	1,276.0	(4.3)[6]
39,499.9	44,141.9	4,642.0	Total	44,141.9	46,446.9	(2,305.0)
			Government of Canada			
57.5	35.4	(22.1)	(a) Flood Damage Reduction Agreement	35.4	66.3	(30.9)
165.6	177.0	11.4	(b) Waterfowl Damage Prevention Agreement	177.0	135.3	41.7
346.2	0.0	(346.2)	(c) Forest Renewal Agreement	0.0	750.0	(750.0)[7]
14.6	18.8	4.2	(d) Beaver Damage Control Agreement	18.8	30.0	(11.2)
857.5	1,290.3	432.8	(e) Softwood Lumber Export Recovery	1,290.3	750.0	540.3[8]
262.1	342.4	80.3	(f) Indian Wildlife Management Contribution Arrangement Agreement	342.4	342.4	0.0[9]
0.0	427.5	427.5	(9) Seedling Agreement	427.5	0.0	427.5[10]
1,703.5	2,291.4	587.9	Total	2,291.4	2,074.0	217.4
			Revenues Related to Capital			
			Other Revenue			
439.1	742.8	303.7	(a) Lands	742.8	450.0	292.8[11]
0.8	0.0	(0.8)	(b) Water Resources	0.0	178.2	(178.2)[12]
0.0	100.0	100.0	(c) Carman Diversion	100.0	0.0	100.0[13]
439.9	842.8	402.9	Total	842.8	628.2	214.6
			Government of Canada			
957.9	310.7	(647.2)	(a) Town Dykes Agreement	310.7	396.0	(85.3)[14]
539.4	31.9	(507.5)	(b) Agri-Food Agreement	31.9	25.0	6.9[15]
1,497.3	342.6	(1,154.7)	Total	342.6	421.0	(78.4)
43,140.6	47,618.7	4,478.1	Total Revenue	47,618.7	49,570.1	(1,951.4)

Table AF.9 (Continued)

[1]*Forestry—$580,000 under 1988-1989. In 1989-1990 timber permits and timber sales were $299,100 lower than in 1988-1989 due to a general market decline experienced in 1989-1990. Revenue collected for fire-suppression recoveries was $93,300 lower in 1989-1990 than in the previous year. Revenue from this source can vary significantly from year to year as it is dependent on the severity of the prior fire season(s). In 1989-1990 revenue from forest management licences/fees was down $214,900 from 1988-1989. In the 1988-1989 fiscal year, Abitibi-Price Inc. paid the Province $360,900 in reforestation fees, which were subsequently granted back to the company. Based on a new agreement with the company effective July 1st 1988, Abitibi-Price Inc. no longer remits such funds to the Province but deposits them in a trust account from which the company funds forest renewal. An offsetting increase of $62,300 was due to a rate increase of $0.64 in 1989-1990 paid by Abitibi-Price Inc. for stumpage fees. A further increase in revenue was due to the conditions of sale of the Manfor operation to Repap Inc. in May 1989, under which Repap Inc. agreed to remit stumpage fees for all wood on inventory at the time of purchase. Under agreement with the Province, Repap Inc. pays stumpage fees on all wood delivered to the mill while stumpage fees only applied to finished products under the previous agreement with Manfor.*

[2]*Municipalities Shared Cost Receipts— $48,900 under 1988-1989. The Cooks Creek Diversion Project was initiated and partially funded under the* Canada-Manitoba Value Added Crops Production Agreement *which expired in 1986. Work not eligible for cost-sharing under the agreement was to be completed by the Province with recovery of 20% from the Cooks Creek Conservation District in the following fiscal year. However, in 1988-1989, Canada and Manitoba agreed to complete the diversion under the* Canada-Manitoba Agri-Food Agreement *with Canada reimbursing the Province 100% of the cost. In 1988-1989 the Cooks Creek Conservation District contributed $62,900 compared to $1,100 in 1989-1990. This decrease was offset by a $13,000 increase in services provided to municipalities resulting from an increase in requests for municipal surveys in 1989-1990.*

[3]*Parks—$517,000 under estimate. Revenue derived from camping fees and park entrance fees was lower by $348,600 and $64,300, respectively, due to reduced park attendance because of poor weather conditions. The severe wind storm in the summer of 1989, the forest-fire hazard level, and unrealised revenue from the sale of fuelwood were contributing factors for this decrease. The wind storm caused the temporary closure of the Grand Beach campground for clean-up operations. Various park sites in the Interlake, Western, Northeastern and Northwestern Regions were closed temporarily due to the high forest-fire hazard. Revenue from the operation of the Falcon Lake Golf Course was down by $77,900 as the course was in poor condition due to the hot dry weather, resulting in a decline in use. Anticipated revenue of $25,000 from the golf course at Hecla Provincial Park was not realised due to a delay in the conclusion of an agreement with Venture Manitoba Tours Ltd.*

[4]*Water Resources—$1,756,200 under estimate. The 1989-1990 revenue estimate for water power rentals was determined using long-term averages of precipitation and water flows. Despite a 10% increase in water power rental rates effective September 1st 1989, actual revenue received was $1,772,000 less than estimated due to below-normal precipitation and, consequently, with less hydroelectric power being available for sale than was originally anticipated. The water levels were higher in 1989-1990 than in 1988-1989 but still below that of an average year.*
Water Resources—$4,968,400 over 1988-1989. Actual revenue collected by the Water Resources Branch for water power rentals amounted to $4,993,300 more in 1989-1990 than in 1988-1989 due to a 10% increase in rates effective September 1st 1989 and higher water levels. Rates increased from $3.58 x installed horsepower capacity or $8.96 x horsepower years of output, whichever is greater, to $3.96 and $9.90 respectively. An offsetting decrease of $24,900 in water-rights fees was due to the elimination of water-use charges for municipalities.

[5]*Wildlife—$239,100 over 1988-1989. The 1989-1990 estimates included approved fee increases for big game and game bird licences, which generated $306,100 in increased revenue, and approved fee increases for sundry licences and permits, which generated a further $8,700. These increases were offset by reductions of $60,600 in fur royalties due to a 50% reduction in royalties which came into effect after the start of the 1989-1990 fiscal year. This reduction was the result of the general decline in the fur market coupled with reduced trapping caused by trapline and habitat destruction in the 1989-1990 forest fires. Additionally, a decrease in the number of polar bear hides sold accounted for a $7,200 reduction in revenue from the prior year.*

[6]*Sundry—$147,700 over 1988-1989. Revenue from commissary items supplied to staff, firefighters and equipment operators during the severe forest-fire season increased by $237,700 in 1989-1990. The annual fee for the service to Gull Harbour Lodge and Conference Centre is $38,000. However, the fees for both 1987-1988 and 1988-1989 were received in 1988-1989 while no revenue was received in 1989-1990 as a new lease agreement between the Province and Venture Manitoba Tours Ltd. was not concluded.*

[7]*Forest Renewal Agreement—$346,200 under 1988-1989. The* Canada-Manitoba Forest Renewal Agreement *expired on March 31st 1989.*
Forest Renewal Agreement—$750,000 under estimate. The Canada-Manitoba Forest Renewal Agreement *expired on March 31st 1989. However, at the time the 1989-1990 revenue estimates were prepared, the department anticipated that a new five-year cost-shared agreement would be signed with Canada with an estimated revenue of $750,000. The agreement was not renegotiated as anticipated.*

[8]*Softwood Lumber Export Recovery—$432,800 over 1988-1989. Revenue collected in 1989-1990 was $432,800 higher than the prior year due to greater quantities of lumber being sold to United States customers as opposed to the domestic market in the 1989-1990 fiscal year.*

Table AF.9 (Continued)

Softwood Lumber Export Recovery—$540,000 over estimate. The 1989-1990 revenue estimate was based on the assumption that a decline in demand for softwood lumber would take place in the United States. However, this demand increased. With the sale of the Manfor operation to Repap Inc. it was anticipated that the sawmill facilities would be shut down in favour of the planned pulp-and-paper operation. However, until the environmental impact studies are completed the sawmill remains in operation.

[9]Indian Wildlife Management Contribution Arrangement Agreement—*$80,300 over 1988-1989. A new five-year agreement was signed with Canada late in the 1988-1989 fiscal year. The delay in signing the agreement postponed project implementation resulting in expenditures being lower than originally anticipated. In 1989-1990, projects and programs were fully operational from the beginning of the fiscal year and, therefore, recoveries from Canada were based on full-year expenditures.*

[10]*Seedling Agreement—$427,500 over 1988-1989 and over estimate. The department concluded a one-year seedling agreement under which Canada would contriburte 50% of costs incurred in the planting of seedlings during the 1989 crop year to a maximum of $472,000. Actual expenditures for planting amounted to $855,100, generating revenue of $427,500.*

[11]*Lands—$303,700 over 1988-1989. Agricultural and commercial land sales increased over the previous year. A portion of this growth in agricultural sales can be attributed to the lifting of a freeze on sales imposed because of the construction being undertaken on the Pasquia Polder III land drainage project. A backlog of land appraisals was completed early in 1989-1990 which also increased sales. An increase in recreational land sales was due to a new inventory of lots being placed on the market.*
Lands—$292,800 over estimate. The 1989-1990 revenue estimate was based on a decreasing demand for Crown land. However, due to the reasons noted above this trend was reversed in 1989-1990.

[12]*Water Resources—$178,200 under estimate. It was estimated that revenue would be received during the 1989-1990 fiscal year from various municipalities and towns for a portion of the costs involved in raising the level of ring dykes around communities. Agreements have been signed with the various municipalities/towns where they will reimburse the Province 5% of the applicable capital costs associated with raising ring dykes to the 1% flood level. Depending on the agreements, reimbursement is to be completed within either five or seven years. It is difficult to project when revenues will be received from this source due to the time allowed for reimbursement. No revenue was received from this source during the 1989-1990 fiscal year. The R.M. of Richot requested that the ring dyke be extended beyond that covered by the federal-provincial agreement so that future community expansion would be possible. Manitoba would complete the work during the 1989-1990 fiscal year and be reimbursed for the cost by the municipality. Construction was not completed until late in the fiscal year and billings were not finalised prior to the end of the fiscal year.*

[13]*Carman Diversion—$100,000 over estimate and over 1988-1989. Under the* Canada-Manitoba Agri-Food Agreement *signed on May 30th 1984 the federal and provincial governments agreed to share the cost of constructing a diversion of the Boyne River around the Town of Carman to protect the town from flooding, with Canada contributing 70% of the cost. On September 15th 1989 the department signed an agreement with the Town of Carman in which the Town agreed to contribute 5% of the cost of the diversion over five years to a maximum of $350,000. At the time the 1989-1990 revenue estimates were prepared the department did not anticipate that construction would be such that the Town of Carman would be required to contribute to the cost in 1989-1990. However, favourable weather conditions enabled construction to progress faster than anticipated.*

[14]Canada-Manitoba Flood Protection Prcjects Agreement—*$647,200 under 1988-1989. Actual expenditures made under the* Canada-Manitoba Flood Protection Projects Agreement *amounted to $852,100 for 1989-1990. Canada's share under the agreement is 45% of eligible costs to protect various towns to the 1% flood level. The 1989-1990 claim was based on the final year-end amount but was reduced to offset additional work done in St. Adolphe and Emerson in 1988-1989 and 1989-1990 which went beyond the scope of the agreement. Expenditures for additional land and construction totalled $164,900 and applicable adjustments were applied to the 1989-1990 claim which was submitted to Canada. Canada's contribution for the 1989-1990 fiscal year was $310,700. In the 1988-1989 fiscal year Canada contributed $957,900 based on actual expenditures of $2,122,600.*
Canada-Manitoba Flood Protection Projects Agreement—*$85,300 under estimate. The 1989-1990 revenue estimate for the* Canada-Manitoba Flood Protection Projects Agreement *was based on the 1989-1990 expenditure estimate of $880,000. However, actual expenditures amounted to only $852,100. The claim was based on this amount but was reduced to offset additional work done in St. Adolphe and Emerson in 1988-1989 and 1989-1990 which went beyond the scope of the agreement. Expenditures for additional land and construction totalled $164,900 and applicable adjustments were applied to the 1989-1990 claim which was submitted to Canada.*

[15]*Agri-Food Agreement—$507,500 under 1988-1989. The Cooks Creek Diversion Project was initiated and partially completed under the* Canada-Manitoba Value Added Crops Production Agreement *which expired in 1986. In 1988-1989 Canada and Manitoba agreed to complete the Cooks Creek Diversion under the* Canada-Manitoba Agri-Food Agreement *with recovery from Canada of 100% of eligible costs. The major part of the construction was completed in 1988-1989 and Canada contributed $556,200. However, construction site clean-up and seeding remained incomplete requiring limited expenditures and recovery of $20,200 in 1989-1990.*

Table AF.10

Expenditure Summary: Appropriation 12-1 (Administration and Finance) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
20,600	(a) Minister's Salary	20,500	20,600	(100)
	(b) Executive Support			
243,300	Salaries	244,000	222,000	22,000
87,700	Other Expenditures	112,300	106,200	6,100
	(c) Resource Allocation and Economics			
831,100	Salaries	848,000	812,700	35,300
193,400	Other Expenditures	180,900	182,700	(1,800)
	(d) Financial Services			
912,400	Salaries	868,800	788,000	80,800
222,100	Other Expenditures	221,200	200,900	20,300
	(e) Human Resources			
858,100	Salaries	930,400	810,900	119,500
170,800	Other Expenditures	201,200	173,800	27,400
	(f) Computer Services			
307,800	Salaries	304,100	296,200	7,900
41,900	Other Expenditures	40,500	41,500	(1,000)
	(g) Administrative Services			
718,100	Salaries	794,400	687,900	106,500
119,600	Other Expenditures	112,200	119,400	(7,200)
	(h) Internal Audit			
154,900	Salaries	149,000	133,500	15,500
10,000	Other Expenditures	9,700	9,300	400
50,000	(j) Venture Manitoba Tours Ltd.	106,800	(141,900)	248,700[1]
4,941,800	Total Appropriation 12-1	5,144,000	4,463,700	680,300

[1] *The corporation operated at a loss of $90,000 in 1989-1990 compared to a profit in 1988-1989 of $141,900. This loss resulted from decreased occupancy at the resort due to renovations undertaken in December 1989. Additionally, the department was required to pay $16,800 in interest on a loan provided to the corporation in 1989-1990 by the Department of Finance.*

Table AF.11

Expenditure Summary: Appropriation 12-2 (Regional Services) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
	(a) Administration			
914,700	Salaries	945,800	836,700	109,100
779,700	Other Expenditures	781,800	822,000	(40,200)
142,400	Problem Wildlife Control	187,900	343,900	(156,000)[1]
	(b) Northwestern Region			
1,113,600	Salaries	1,067,300	1,018,700	48,600
360,000	Other Expenditures	364,800	361,500	3,300
	(c) Northeastern Region			
1,304,700	Salaries	1,236,600	1,135,000	101,600
700,300	Other Expenditures	696,200	696,300	(100)
	(d) Interlake Region			
1,423,400	Salaries	1,691,200	1,328,500	362,700[2]
499,600	Other Expenditures	520,100	523,500	(3,400)
	(e) Southwestern Region			
903,200	Salaries	877,600	826,800	50,800
291,100	Other Expenditures	291,900	291,400	500
	(f) Western Region			
1,311,600	Salaries	1,213,300	1,232,800	(19,500)
419,000	Other Expenditures	416,300	421,100	(4,800)
	(g) Southeastern Region			
1,094,500	Salaries	1,074,000	969,800	104,200
326,700	Other Expenditures	326,100	324,000	2,100
	(h) Eastern Region			
1,125,000	Salaries	1,079,500	990,400	89,100
337,900	Other Expenditures	332,500	337,700	(5,200)
	(j) Whiteshell Region			
775,200	Salaries	738,400	720,900	17,500
265,600	Other Expenditures	264,900	256,500	8,400
	(k) N.D.A. - Provincial - Fire Program Development and Evaluation			
291,900	Salaries	255,800	262,100	(6,300)
359,600	Other Expenditures	242,200	244,900	(2,700)
	(m) N.D.A. - Provincial - Fire Detection Program			
41,400	Salaries	39,300	38,400	900
288,100	Other Expenditures	240,200	196,400	43,800
	(n) N.D.A. - Provincial - Fire Prevention Program			
24,200	Salaries	22,500	18,900	3,600
66,900	Other Expenditures	65,100	34,200	30,900[3]
	(p) N.D.A. - Provincial - Fire Pre-suppression Program			
1,327,200	Salaries	1,279,800	1,213,600	66,200
2,243,600	Other Expenditures	2,138,700	2,215,100	(76,400)

Table AF.11 (Continued)

59,000,000	(r) N.D.A. - Provincial - Fire Extra-suppression Fund	56,663,000	17,769,200	38,893,800[4]
1,017,100	(s) N.D.A. - Provincial - Fire Tac Program	991,600	984,200	7,400
1,230,300	(t) N.D.A. - Provincial -Helitac Program	1,293,000	1,189,500	103,500
79,978,500	Total Appropriation 12-2	77,337,400	37,604,000	39,733,400

[1] *The decrease in expenditures in the problem wildlife control program was due to a one-time emergency big-game feeding program implemented in the 1988-1989 winter season.*

[2] *Additional expenditures were made for payments of workers' compensation benefits.*

[3] *The increase in expenditures was due to the purchase of additional promotional and advertising material to emphasise fire-prevention methods to the general public.*

[4] *The increase in expenditures was due to the severe wildlife season experienced in the province. There were 1,147 fires which burned 3,281,300 hectares of land and forested areas in 1989. The six-year annual average of fires dealt with was 549. Three major fires at Swan/Pelican Lakes/Cowan, at Ashern/Hodgson/Fisher River and at Sandy River/ Manigotagan destroyed over 1,000,000 hectares of grasslands, brush and forest, and private property including farms, cottages, equipment and cattle. Thousands of people were forced to evacuate their communities before these fires were brought under control and extinguished.*

Table AF.12

Expenditure Summary: Appropriation 12-3 (Engineering and Construction) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
	(a) Administration			
557,500	Salaries	504,300	488,700	15,600
248,700	Other Expenditures	246,800	217,700	29,100
	(b) Technical Services			
1,679,800	Salaries	1,664,000	1,596,500	67,500
97,400	Other Expenditures	97,500	92,700	4,800
(55,000)	Less: Recoverable from Other Appropriations	(91,300)	(78,100)	(13,200)
	(c) Regional Engineering Services			
3,865,500	Salaries	3,837,200	3,882,400	(45,200)
1,017,300	Other Expenditures	810,100	832,700	(22,600)
(325,000)	Less Recoverable from Other Appropriations	(92,100)	(172,000)	79,900
7,086,200	Total Appropriation 12-3	6,976,500	6,860,600	115,900

Table AF.13

Expenditure Summary: Appropriation 12-4 (Water Resources) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
	(a) Administration			
395,700	Salaries	316,100	330,100	(14,000)
113,300	Other Expenditures	128,000	109,400	18,600
	(b) Water Licensing and Approvals			
525,900	Salaries	553,100	519,400	33,700
26,300	Other Expenditures	29,700	27,000	2,700
	(c) Water Management			
1,459,800	Salaries	1,427,900	1,383,100	44,800
274,500	Other Expenditures	253,100	239,900	13,200
3,820,000	Waterway Maintenance	3,793,700	4,435,000	(641,300)[1]
	(d) Hydrotechnical Services			
1,143,500	Salaries	1,158,000	1,104,800	53,200
836,900	Other Expenditures	832,800	867,800	(35,000)
	(e) Regional Management			
340,600	Salaries	344,300	340,100	4,200
38,500	Other Expenditures	40,900	37,700	3,200
	(f) Canada-ManitobaFlood Damage Reduction Agreement			
43,900	Salaries	50,100	84,200	(34,100)[2]
88,600	Other Expenditures	26,200	27,800	(1,600)
9,107,500	Total Appropriation 12-4	8,953,900	9,506,300	(552,400)

[1] *The decrease in expenditures was due to a one-time expenditure in 1988-1989 for the removal of soil drift from provincial waterways caused by high winds coupled with low precipitation in the spring of 1988.*

[2] *The Flood Forecasting Sub-agreement of the Canada-Manitoba Flood Damage Reduction Agreement ended on September 30th*

Table AF.14

Expenditure Summary: Appropriation 12-5 (Parks) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
	(a) Administration			
527,600	Salaries	423,900	453,700	(29,800)
202,900	Other Expenditures	197,800	212,500	(14,700)
	(b) Park Planning			
555,300	Salaries	558,600	493,900	64,700
117,000	Other Expenditures	110,300	123,300	(13,000)
	(c) Program Management			
326,900	Salaries	353,400	331,500	21,900
39,900	Other Expenditures	40,800	40,600	200
	(d) Park Operations and Maintenance			
8,910,600	Salaries	8,830,700	8,788,700	42,000
2,820,800	Other Expenditures	2,805,100	2,941,600	(136,500)
	(e) Visitor Services			
396,400	Salaries	381,100	398,100	(17,000)
76,900	Other Expenditures	86,600	102,500	(15,900)
68,700	(f) Grant Assistance	170,000	98,700	71,300[1]
	(g) Regional Park Management			
331,600	Salaries	343,600	297,800	45,800
70,000	Other Expenditures	68,400	50,000	18,400
14,444,600	Total Appropriation 12-5	14,370,300	14,332,900	37,400

[1] *A supplementary operating grant was made to the International Peace Gardens Inc. in 1989-1990 in the amount of $61,300 to assist in the operation and maintenance of the park.*

Table AF. 15

Expenditure Summary: Appropriation 12-6 (Lands) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
	(a) Administration			
93,700	Salaries	93,300	88,300	5,000
26,200	Other Expenditures	26,000	26,200	(200)
	(b) Crown Lands Administration			
752,300	Salaries	771,400	735,000	36,400
182,600	Other Expenditures	153,300	184,900	(31,600)
	(c) Regional management			
326,000	Salaries	322,600	307,900	14,700
87,800	Other Expenditures	83,000	82,300	700
	(d) Crown Lands Registry			
239,300	Salaries	224,000	214,900	9,100
183,000	Other Expenditures	201,200	189,000	12,200
	(e) N.D.A. - Provincial - Wild Rice			
0	Salaries	0	120,400	(120,400)[1]
0	Other Expenditures	0	62,300	(62,300)[1]
1,890,900	Total Appropriation 12-6	1,874,800	2,011,200	(136,400)

[1] *The wild rice program was reduced to a regulatory program in 1989, with existing field staff undertaking the function.*

Table AF. 16

Expenditure Summary: Appropriation 12-7 (Forestry) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
	(a) Administration			
212,300	Salaries	250,100	175,000	75,100
5,000	Other Expenditures	4,700	4,800	(100)
34,400	Grant Assistance	34,400	34,400	0
	(b) Forest Management			
792,200	Salaries	774,800	722,700	52,100
160,900	Other Expenditures	138,700	153,300	(14,600)
	(c) Silviculture			
247,200	Salaries	248,200	252,600	(4,400)
449,200	Other Expenditures	447,300	816,400	(369,100)[1]
	(d) Forest Protection			
786,500	Salaries	695,900	707,400	(11,500)
1,367,800	Other Expenditures	1,967,700	1,240,100	727,600[2]
	(e) Forest Operations			
1,038,200	Salaries	1,031,400	907,800	123,600
276,200	Other Expenses	269,200	273,900	(4,700)
	(f) N.D.A. -Provincial - Forest Renewal			
461,200	Salaries	435,200	440,100	(4,900)
1,574,400	Other Expenditures	1,574,100	1,503,500	70,600
	(g) Forest Development Program			
352,700	Salaries	340,200	287,500	52,700
2,053,000	Other Expenditures	2,036,400	2,020,800	15,600
	(h) Canada-Manitoba Forest Renewal Agreement			
38,600	Salaries	31,300	33,400	(2,100)
2,906,300	Other Expenditures	2,827,600	2,871,300	(43,700)
12,756,100	Total Appropriation 12-7	13,107,200	12,445,000	662,200

[1] *A change in the accounting provisions of the trust account under the forest management and renewal agreement between Abitibi-Price Inc. and the Province resulted in the Province no longer being required to reimburse the company for additional stumpage fees charged to the company for forest renewal purposes. This reimbursement was $360,000 in 1988-1989.*

[2] *Expenditures under the provincial Dutch elm disease control program were higher in 1989-1990 due to the increased incidence of the disease resulting from three successive years of drought. The provincial share of the 1989-1990 Dutch elm disease control cost-sharing with the City of Winnipeg was increased by $350,000 and the control effort under the provincial program was enhanced.*

Table AF.17

Expenditure Summary: Appropriation 12-8 (Fisheries) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
	(a) Administration			
228,800	Salaries	223,000	214,600	8,400
46,700	Other Expenditures	55,700	47,900	7,800
	(b) Regional Management			
786,800	Salaries	734,900	763,200	(28,300)
245,900	Other Expenditures	254,300	239,800	14,500
	(c) Fish Culture			
585,700	Salaries	526,400	482,500	43,900
161,200	Other Expenditures	220,000	158,000	62,000[1]
	(d) Fisheries Enhancement			
701,600	Salaries	685,600	657,800	27,800
230,600	Other Expenditures	170,900	224,800	(53,900)
	(e) Commercial Fishing Management			
209,700	Salaries	172,000	192,800	(20,800)
35,000	Other Expenditures	226,000	35,300	190,700[2]
	(f) Sport Fishing Management			
184,900	Salaries	161,000	186,200	(25,200)
40,000	Other Expenditures	52,100	43,600	8,500
342,600	(g) Northern Fishermen's Freight Assistance	422,800	450,700	(27,900)
452,900	(h) Fishermen's Loan Program - Administration	681,500	352,100	329,400[3]
4,252,400	Total Appropriation 12-8	4,586,200	4,049,300	536,900

[1] *Operation of the Grand Rapids Fish Hatchery was expanded to year-round production in 1989-1990 under a five-year agreement with Manitoba Hydro, which funding is 100% recoverable from Manitoba Hydro.*

[2] *Continuous overfishing had resulted in the biological and economic decline of the Lake Winnipegosis commercial fishery. The open-water season had been closed from 1986 through 1988 and reopened in 1989. To eliminate the possibility of further over-harvesting, the department undertook a one-time buy-back of commercial fishing quotas for $10,000 per quota. Nineteen quotas were bought back in 1989-1990.*

[3] *The inversion of long- and short-term interest rates during 1989-1990 resulted in a higher-than-anticipated differential between the cost of borrowing funding and the interest gained on loans to fishermen.*

Table AF.18

Expenditure Summary: Appropriation 12-9 (Wildlife) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
	(a) Administration			
235,100	Salaries	211,800	204,600	7,200
41,300	Other Expenditures	71,700	45,500	26,200
	(b) Operational Management			
527,000	Salaries	521,400	509,400	12,000
128,100	Other Expenditures	170,300	169,800	500
1,000	Grant Assistance	1,000	1,000	0
	(c) Habitat Management			
409,600	Salaries	401,700	368,600	33,100
425,300	Other Expenditures	401,600	377,300	24,300
	(d) Biological Services			
474,500	Salaries	456,400	444,200	12,200
168,300	Other Expenditures	161,000	184,000	(23,000)
12,000	Grant Assistance	12,000	12,000	0
	(e) Regional Management			
609,100	Salaries	633,900	569,800	64,100
179,400	Other Expenditures	192,300	177,100	15,200
	(f) N.D.A. - Provincial - Wildlife Management			
137,800	Salaries	135,900	128,700	7,200
123,500	Other Expenditures	98,300	113,100	(14,800)
	(g) Fur Management			
465,500	Salaries	442,700	419,600	23,100
358,000	Other Expenditures	289,300	301,900	(12,600)
60,900	Grant Assistance	60,900	60,900	0
	(h) Canada-Manitoba Waterfowl Damage Prevention			
329,000	Agreement	293,200	298,600	(5,400)
	(j) Commercial Wildlife Management			
265,700	Salaries	179,000	209,700	(30,700)
51,300	Other Expenditures	159,200	132,700	26,500
4,000	Grant Assistance	100	1,000	(900)
202,000	Big Game Damage Compensation	266,600	163,000	103,600[1]
5,208,400	Total Appropriation 12-9	5,160,300	4,892,500	267,800

[1] *The severity of crop damage in 1989-1990 far exceeded that of 1988-1989 due mainly to increased elk population in the Spruce Woods and Swan River valley areas. Expenditures are dependent on the number of claims received each year.*

Table AF.19

Expenditure Summary: Appropriation 12-10 (Surveys and Mapping) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
	(a) Administration			
325,000	Salaries	331,400	287,700	43,700
57,700	Other Expenditures	68,000	66,500	1,500
	(b) Field Surveys			
706,300	Salaries	712,600	671,600	41,000
416,200	Other Expenditures	299,500	234,600	64,900
(170,000)	Less Recoverable from Other Appropriations	(50,600)	(18,700)	(31,900)
	(c) Mapping			
746,000	Salaries	742,800	699,400	43,400
120,500	Other Expenditures	130,500	122,600	7,900
(31,000)	Less Recoverable from Other Appropriations	(53,900)	(30,700)	(23,200)
	(d) Map Distribution and Remote Sensing			
446,300	Salaries	440,700	419,300	21,400
369,200	Other Expenditures	345,900	358,200	(12,300)
(185,000)	Less Recoverable from Other Appropriations	(176,700)	(166,700)	(10,000)
	(e) Computer Services and Data Management			
492,200	Salaries	472,900	459,800	13,100
136,400	Other Expenditures	139,700	140,400	(700)
3,429,800	Total Appropriation 12-10	3,402,800	3,244,000	158,800

Table AF.20

Expenditure Summary: Appropriation 12-11 (Resource Support Programs) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
173,400	(a) Manitoba Water Commission	139,500	78,600	60,900[1]
25,000	(b) Garrison Diversion Opposition	28,600	16,300	12,300
200,000	(c) Habitat Enhancement Fund	200,000	250,000	(50,000)[2]
20,000	(d) Natural Resources Institute Grant	20,000	20,000	0
190,000	(e) Sustainable Development	185,600	0	185,600[3]
608,400	Total Appropriation 12-11	573,700	364,900	208,800

[1] *In 1989-1990 the department continued a process of public forums to assist in establishing a provincial land and water strategy. The number of forums and, therefore, the cost was significantly higher than in the previous year.*

[2] *The Province established the Manitoba Habitat Heritage Corporation under the Manitoba Heritage Act in 1985. The objectives of the corporation are the conservation, restoration and enhancement of Manitoba's fish and wildlife habitat and populations. The corporation is pursuing public and private sector donations in order to become self-sufficient thereby allowing the department to phase out grant funding.*

[3] *The Province established a Sustainable Development Co-ordination Unit in 1989-1990 to provide assistance and co-ordination in the design and implementation of environmentally sound economic development in Manitoba at both the provincial and community levels.*

Table AF.21

Expenditure Summary: Appropriation 12-12 (Expenditures Related to Capital) for the Fiscal Year Ending March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
242,500	(a) Acquisition/Construction of Physical Assets N.D.A. - Provincial - Northern Park Development	214,800	240,200	(25,400)
8,707,900	(b) Acquisition/Construction of Other Physical Assets	7,920,300	8,340,200	(419,900)
0	(c) Capital Gains	0	100,000	(100,000)[1]
8,950,400	Total Appropriation 12-12	8,135,100	8,680,400	(545,300)

[1] *In 1988-1989 the Province made a one-time additional capital grant to the International Peace Gardens Inc. to assist with the cost of construction of a sewage lagoon at the park.*

Table AF.22

Expenditure Summary: Appropriations 12-1 to 12-12 Inclusive for the Fiscal Year Ending on March 31st 1990

Estimate 1989-1990	Appropriation	Actual 1989-1990	Actual 1988-1989	Increase (Decrease)
152,655,000	Total Expenditures	149,622,200	108,454,800	41,167,400

Table AF.23

Five-Year Expenditure and Staffing Summary by Appropriation ($000) for Years Ending March 31st 1986 to March 31st 1990

Appropriation	Actual/Adjusted* Expenditures									
	1985-1986		1986-1987		1987-1988		1988-1989		1989-1990	
	SY	$	SY	$	SY	$	SY	$	SY	$
12-1 Administration and Finance	114.39	3,918.3	111.25	3,935.2	110.30	5,230.1	115.04	4,463.7	114.30	5,144.0
12-2 Regional Services	356.36	20,045.7	358.36	20,108.2	340.08	27,737.8	340.45	37,604.0	339.45	77,337.3
12-3 Engineering and Construction	189.26	6,783.8	183.26	6,704.3	177.00	6,825.5	168.26	6,860.6	163.26	6,976.5
12-4 Water Resources	97.00	8,628.4	97.00	8,481.1	95.00	8,710.7	95.00	9,506.3	92.00	8,953.9
12-5 Parks	417.04	12,887.4	420.04	13,219.1	417.04	13,705.3	409.04	14,332.9	386.12	14,370.3
12-6 Lands	53.00	2,008.3	46.00	1,946.5	44.00	1,951.8	41.00	2,011.2	37.00	1,874.8
12-7 Forestry	121.16	11,269.8	119.16	13,268.4	115.16	13,243.4	110.31	12,445.0	110.31	13,107.3[1]
12-8 Fisheries	76.10	3,789.9	74.10	3,891.6	74.10	3,967.3	74.10	4,049.3	72.10	4,586.2
12-9 Wildlife	72.41	4,373.0	72.41	4,616.8	74.41	4,744.2	72.41	4,892.5	78.41	5,160.3
12-10 Surveys and Mapping	73.26	2,956.3	74.26	3,008.3	72.00	3,114.3	72.00	3,244.0	72.00	3,402.8
12-11 Resource Support Programs	3.00	459.1	2.00	373.4	0.00	326.8	0.00	364.9	0.00	573.7[2]
12-12 Capital	0.00	12,568.8	0.00	8,817.2	0.00	7,230.5	0.00	8,680.4	0.00	8,135.1[1,2]
Court Judgement	0.00	86.0	0.00	0.0	0.00	0.0	0.00	0.0		
Total	1,574.42	89,774.8	1,559.28	88,370.1	1,520.05	96,787.7	1,499.05	108,454.8	1,466.39	149,622.2

** Adjusted figures reflect historical data on a comparable basis in those appropriations affected by a reorganization during the years under review.*

[1] *Effective April 1st 1988 staffing and funding related to jobs fund programming including capital were transferred to the department.*

[2] *Effective April 1st 1989 staffing and funding related to Conservation Districts Authority programming including capital and capital grants were transferred to the Department of Rural Development.*

Section 16

Directory

Legislation of the Department

The Boating Restriction Regulations under the *Canada Shipping Act.*
The Conservation District Act.
The Crown Lands Act. Except sections 8,9,12, 14(1), 20,22-24,26, 28, 31-35, in so far as they relate to the administration of Crown lands which may be designated by the Minister of Natural Resources as agricultural Crown lands, and *Manitoba Revised Regulation C340 -R1* and amendments thereto.
The Dutch Elm Disease Act.
The Dyking Authority Act.
The Ecological Reserves Act.
The Fires Prevention Act (Part 1).
The Fisheries Act (Canada).
The Fisheries Act (Manitoba).
The Fishermen's Assistance and Polluters' Liability Act.
The Forest Act.
The Ground Water and Well Water Act.
The International Peace Garden Act.
The Lake of the Woods Control Board Act.
The Manitoba Fishery Regulations. Made pursuant to Section 34 of *The Fisheries Act* (Canada).
The Manitoba Habitat Heritage Act.
The Manitoba Natural Resources Act.
The Manitoba Natural Resources Development Act. Except with respect to Channel Area Loggers Ltd., Moose Lake Loggers Ltd. and Manitoba Mineral Resources Ltd.
The Manitoba Natural Resources Agreement Amendments Act.
The Migratory Bird Convention Act and Regulations.
The Provincial Park Lands Act.
The Rivers and Streams Act.
The Surveys Act (Part II).
The Water Commission Act.
The Water Resources Administration Act.
The Water Power Act.
The Water Rights Act.
The Water Supply Commissions Act.
The Wild Rice Act.
The Wildlife Act. Except that portion of Section 89(e) that applies to compensation for damage to crops caused by wildlife except as it pertains to migratory waterfowl.

Departmental Directory

Minister's Office

314 Legislative Building
450 Broadway
Winnipeg, Manitoba
R3C 0V8

Minister	945-3730
Executive Assistant	945-5064
Special Assistant	945-1041
Secretary	945-4071

Deputy Minister's Office

314 Legislative Building
450 Broadway
Winnipeg, Manitoba
R3C 0V8

Deputy Minister	945-3785
	945-3982
Secretary	945-3785

Assistant Deputy Minister's Office

800 - 1495 St. James Street
Winnipeg, Manitoba
R3H 0W9

Assistant Deputy Minister	945-6829
Special Assistant	945-4842
Secretary	945-6828

Administrative Services Division

500 - 191 Broadway
Winnipeg, Manitoba
R3C 4B2

Financial Services	Director	945-4187
Accounts Payable	Supervisor	945-4247
Budget Services	Supervisor	945-4000
Internal Audit	Manager	945-3993
Revenue Accounting	Supervisor	945-4234
Wildlife/Fisheries Licensing	Supervisor	945-1399
Human Resources	Director	945-2808
Affirmative Action	Co-ordinator	945-2810
Development and Training	Manager	945-6776
Occupational Health and Safety	Co-ordinator	945-2537
Payroll Services	Supervisor	945-2812
Personnel Services		945-8863

Operational Support	Chief	945-4170
Systems	Chief	945-4232

Engineering and Construction Branch

1567-1577 Dublin Avenue
Winnipeg, Manitoba
R3E 3J5

Design Services Division	Chief	945-7479
Municipal Engineering Div.	Proj. Manager	945-7462
Project Management Division	Chief	945-7488
Support Services Division	Chief	945-7473
Technical Services Division	Chief	945-7479
Geotechnical	Head	945-6016
Hydraulic	Head	945-7474
Internal Support Systems	Head	945-6012
Sewer and Water	Head	945-7478
Structural	Head	945-7466

Eastern Region (Floodway Office)
Jctn. Trans-Canada Hwy and Red River Floodway

Regional Engineer 945-0168

Interlake/South-Central Region
1577 Dublin Avenue
Winnipeg, Manitoba
R3E 3J5

Regional Engineer 945-7481

Southwestern Region
Neepawa Building
333 Mountain Avenue
Neepawa, Manitoba
R0J 1H0

Regional Engineer 476-2305

Western Region
Provincial Building
27 Second Avenue S.W.
Dauphin, Manitoba
R7N 3E5

Regional Engineer 638-9111

Fisheries Branch

101 - 1495 St. James Street
Winnipeg, Manitoba
R3H 0W9

Commercial Fishing	Chief	945-7805
Enhancement	Chief	945-7792
Fish Culture	Head	945-7789
Sport Fishing	Chief	945-7803

Eastern/Southeastern Region
Provincial Building
20 First Street South
Beausejour, Manitoba
R0E 0C0

Regional Manager 268-1411

Interlake Region
Industrial Park Complex
Box 40
Gimli, Manitoba
R0C 1B0

Regional Manager 642-8742

Northeastern Region
Provincial Building
59 Elizabeth Drive
Thompson, Manitoba
R8N 1X4

Regional Manager 778-4411

Northwestern Region
Provincial Building
3rd Street and Ross Avenue
Box 2550
The Pas, Manitoba
R9A 1M4

Regional Manager 623-6411

Southwestern Region
Agriculture Extension Centre
1129 Queens Avenue
Brandon, Manitoba
R7A 1L9

Regional Manager 726-6449

Western Region
Provincial Building
27 - 2nd Avenue S.W.
Dauphin, Manitoba
R7N 3E5

Regional Manager 638-9111

Forestry Branch

300 - 530 Kenaston Boulevard
Winnipeg, Manitoba
R3N 1Z4

Canada-Manitoba Forest Renewal Agreement
Provincial Manager 945-3191

Forest Management Chief 945-7590

Forest Protection and Dutch Elm Disease
Chief 945-7867

Silviculture
Clearwater Provincial Forest Nursery
Box 2550
The Pas, Manitoba
R9A 1M4

Manager 624-5769

Pineland Provincial Forest Nursery
Box 45
Hadashville, Manitoba
R0E 0X0

Manager 426-5235

Eastern/Interlake Region
Industrial Park Complex
Box 40
Gimli, Manitoba
R0C 1B0

Regional Forester 642-8729

Northeastern/Northwestern Region
Provincial Building
3rd Street and Ross Avenue
Box 2550
The Pas, Manitoba
R9A 1M4

Regional Forester 623-6411

Southeastern Region
Fort Osborne Complex
139 Tuxedo Avenue
Winnipeg, Manitoba
R3N 0H6

Regional Forester 945-7261

Western/Southwestern Region
Provincial Building
27 - 2nd Avenue S.W.
Dauphin, Manitoba
R7N 3E5

Regional Forester 638-9111

Lands Branch

700 - 1495 St. James Street
Winnipeg, Manitoba
R3H 0W9

Indian Land Claims	Manager	945-2284
Land Administration	Chief	945-6652
Leases and Permits	Supervisor	945-6767
Sales	Supervisor	945-6098
Land Appraisal / Special Proj.	Chief	945-6823
Land Claims	Manager	945-2284
Recreational Land Development		945-6819
Development Officer		945-4222
Registry	Chief	945-6779
Wild Rice	Chief	945-6822

Eastern Region
Provincial Building
20 First Street South
Beausejour, Manitoba
R0E 0C0

Land Manager 268-1411

Interlake Region
Box 1800
Gimli, Manitoba
R0C 1B0

Land Manager 642-8719

Northeastern Region
59 Elizabeth Drive
Thompson, Manitoba
R7N 3E5

Land Manager 778-4411

Northwestern Region
Box 2550
The Pas, Manitoba
R9A 1M4

Land Manager 623-6411

Southeastern Region
Box 2019
Steinbach, Manitoba
R0A 2A0

Land Manager 326-4471

Western/Southwestern Region
27 - 2nd Avenue S.W.
Dauphin, Manitoba
R7N 3E5

Land Manager 638-9111

Parks Branch

258 Portage Avenue
Winnipeg, Manitoba
R3C 0B6

Director		945-4362
Secretary		945-3834
Administration	Chief	945-4370
Leases and Permits	Supervisor	945-6773
Planning	Chief	945-4363
Site Planning and Design	Head	945-4382
Systems and Management	Head	945-4366
Technical Services	Chief	945-4364
Visitor Services	Chief	945-4413
Commercial Operations	Head	945-4406
Heritage Properties	Head	945-4388
Interpretation	Head	945-4375
Marketing	Head	945-4374

Eastern Region
Provincial Building
20 - 1st Street S.
Beausejour, Manitoba
R0E 0C0

Park Manager 268-1411

Northwestern/Northeastern Region
Provincial Building
3rd Street and Ross Avenue
Box 2550
The Pas, Manitoba
R9A 1M4

Park Manager 623-6411

Southeastern/Interlake Region
Industrial Park Complex
Box 40
Gimli, Manitoba
R0C 1B0

Park Manager 642-8551

Southwestern Region
Westbran Building
108 -18th Street
Brandon, Manitoba
R7A 5A4

Park Manager 726-6306

Western Region
Provincial Building
27 - 2nd Avenue S.W.
Dauphin, manitoba
R7N 3E5

Park Manager 638-9111

Whiteshell Region
Park Office
Rennie, Manitoba
R0E 1R0

Assistant Park Manager 369-5246

Regional Services Branch

200 - 1495 St. James Street
Winnipeg, Manitoba
R3H 0W9

Director		945-0705
Fire Program	Superintendent	945-7781
Hunter Safety, Guide Training and Problem Wildlife	Co-ordinator	945-6646
Public Information	Chief	945-4619
Education	Head	945-6783
Regulatory and Legislative Services	Chief	945-6642

Eastern Region
Provincial Building
20 - 1st Street S.
Beausejour, Manitoba
R0E 0C0

Manager	268-1411
Regional Superintendent	268-1411

Interlake Region
Box 1800
Gimli, Manitoba
R0C 1B0

Regional Superintendent	642-8551

Northwestern Region
3rd Street and Ross Avenue
The Pas, Manitoba
R9A 1M4

Manager	623-6411
Regional Superintendent	623-6411

Southeastern Region
Building 3
139 Tuxedo Boulevard
Winnipeg, Manitoba
R3N 0H6

Manager	945-7267
Regional Superintendent	945-7268

Southwestern Region
108 - 18th Street
Brandon, Manitoba
R7A 5A4

Regional Superintendent	726-6299

Western Region
27 - 2nd Avenue S.W.
Dauphin, Manitoba
R7N 3E5

Manager	638-9111
Regional Superintendent	638-9111

Whiteshell Region
Park Office
Rennie, Manitoba
R0E 1R0

Regional Superintendent	369-5290

Resource Integration Branch

(formerly Resource Allocation and Economics)
201 - 1495 St. James Street
Winnipeg, Manitoba
R3H 0W9

Director		945-6658
Economics	Chief	945-2305
Land Use Planning	Chief	945-6661
Resource Planning	Chief	945-6656

Surveys and Mapping Branch

1007 Century Street
Winnipeg, Manitoba
R3H 0W4

Director		945-6613
Data Management	Chief	945-5045
Field Surveys	Chief	945-6620
Geographical Names	Toponymist	945-1798
Land Description		945-8394
Map Distribution and Remote Sensing		
Chief		945-6597
Mapping	Chief	945-6637

Water Resources Branch

1577 Dublin Avenue
Winnipeg, Manitoba
R3E 3J5

Director		945-6149
Hydrotechnical Services	Chief	945-6678
Hydrogeology	Head	945-7403
Hydrology	Head	945-6397
Water Management	Chief	945-6395
Special Services	Head	945-7404
Water Control & Conservation	Head	945-6496
Water Licensing/Approvals	Head	945-6495

Eastern/Northeastern Region
Regional Water Manager 945-6117

Interlake Region
Regional Water Manager 945-6490

Southeastern Region
Regional Water Manager 945-6151

Southwestern Region
Neepawa Building
333 Mountain Avenue
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Regional Water Manager 476-2305

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Regional Water Manager 638-9111

Wildlife Branch

100 -1495 St. James Street
Winnipeg, Manitoba
R3H 0W9

Director		945-7761
Biological Services	Chief	945-6809
Bioanalysis	Head	945-6816
Ecological Analysis	Head	945-6817
Commercial Management	Chief	945-7766
Fur	Head	945-7758
Habitat	Chief	945-7763
Management	Chief	945-6810
Regional Management	Chief	945-7755

Interlake Region
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Regional Wildlife Specialist 642-8155

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Regional Wildlife Specialist 726-6448
726-6444